

My Review

Rating
3.0

Updated At
1/8/2017 10:33 AM

Comments
Another informative letter from Antranik Siranosian (LANL). It seems like Antranik ended up doing most of the work. The Q-GRE is a bit lower than we'd like it to be. The rest of the record looks fine.

Summary

PID A11473053	Payment Type Authorize.Net	Term Fall 2017	Department Choice
Start Date 10/11/2016	Payment Status Paid	Major Mechanical Engineering (MC81)	Confirmation
Submit Timestamp 12/14/2016 6:26 PM	Previously Registered No	Degree Doctor of Philosophy (PhD)	Graduate Division Approval
Application Status Under Review		Email csanp001@ucr.edu	Applicant Decision

Administrative Notes

Contact Information

Personal Information

Name (Last, First Middle) Sanpakit, Chirawat Chriss	Date of Birth April 22, 1995
Other Names	Sex Male

Address

Permanent Address 13637 Muscatine Street Arleta, California, 91331	Current Address 400 W. Big Springs Road Riverside, California, 92507
---------------------------------------------------------------------------------	-----------------------------------------------------------------------------------

Telephone Numbers

Primary Phone Number 8182845094	Secondary Phone Number
-------------------------------------------	-------------------------------

Residency and Applicant Data

Residency

City of Birth Los Angeles	Country of Birth United States
Country of Legal Residence United States	Country of Citizenship United States
Residency Status California resident	County of Residence Los Angeles County

Federal Ethnicity

Do you consider yourself Hispanic or Latino? Includes persons of Cuban, Mexican, Puerto Rican, South or Central American or other Spanish culture or origin.
No

Select one or more of the following racial categories as appropriate for you.
Asian

University of California Ethnicity

To help us understand the diverse racial and ethnic backgrounds of our students, which of the following groups best describes your background? Check as many categories as may apply.
Chinese/Chinese American (including Taiwanese), Other South East Asian (e.g., from Cambodia, Laos, Thailand)

U.S. Military Service

Military Service Status for United States Army, Navy, Marines, Air Force, or Coast Guard
None of the above.

Educational Background

Secondary Education

High School Name Granada Hills Charter High School	Graduation Date May 2013
--------------------------------------------------------------	------------------------------------

College Coursework	
School	Credits
No coursework added.	

Colleges and Universities Attended

UC RIVERSIDE	
Address HINDERAKER RM 1120 900 UNIVERSITY AVE RIVERSIDE, CA 92521	Attended From September 26, 2013
	Attended To June 19, 2017
Educational Level Bachelor's Degree or Equivalent	Degree Received In-Progress
Degree Type Bachelor of Science	Degree Date June 19, 2017
Major Mechanical Engineering	
Grading Scale 4.0	

Cumulative GPA

3.69

Last 2 Years GPA

3.72

Transcript

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In-Progress Course**Units**

Robotic Planning and Kinematics

4

Mechanical Engineering Design

3

Technical Communications

4

Kinematic and Dynamic Analysis of Mechanisms

4

Disciplinary Violation

Have you ever been found responsible for a disciplinary violation at any educational institution you have attended since the/after the completion of high school (or the international equivalent) to the present, whether related to academic misconduct or behavioral misconduct, that resulted in your probation, suspension, removal, dismissal or expulsion from the institution?

No

Test Scores

Graduate Record Examination (GRE) - General

Entered By	Registration Number	Test Date	Verbal Reasoning	Quantitative Reasoning	Analytical Writing
APPLICANT	0102420	October 7, 2016	158.0 (80.0%)	159.0 (73.0%)	4.5 (82.0%)

Program Supplement

Mechanical and Aerospace Engineering: Specialization

Please choose an area of specialization that is more specific than your major. For instance, your major may be aerospace and your area of specialization is controls. For more information on the different areas, please visit <http://maeweb.ucsd.edu/researchfields>

Dynamics and Controls

Please check the boxes of any faculty you are interested in working with. For more information on our faculty, go to <http://maeweb.ucsd.edu> and look under the faculty or research tabs.

Thomas Bewley

Jorge Cortes

Miroslav Krstic

Sonia Martinez Diaz

William McEneaney

Recommendations

Dr. Antranik Siranosian (antranik@lanl.gov)

Title

Research and Development Engineer

Institution

Los Alamos National Laboratory

Department

Weapon Systems Engineering

Phone

Waive of Access

Yes

Sent At

11/18/2016 9:08 AM

Letter of Recommendation



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Received At

11/18/2016 10:27 AM

Ability Rating

Very Good (Top 20%)

Potential Rating

Outstanding (Top 10%)



Weapon Systems Engineering

Los Alamos National Laboratory
PO Box 1663, A142
Los Alamos, NM 87545
505-665-4674

Date: November 18, 2016

Subject: Letter of Recommendation for Chirawat Chriss Sanpakit

I mentored Chriss Sanpakit while he was participating in the Los Alamos National Laboratory's 2016 Los Alamos Dynamics Summer School (LADSS) program that ran from early June to early August, and have interacted with him since then regarding the documentation of that effort. Chriss was part of a three-student LADSS team that worked on a project involving the application of Extremum-Seeking (ES) adaptive feedback control to a tunable non-linear vibration energy harvesting system. While he was at LANL we had regular interactions, in person and by e-mail, consisting of technical discussions related to his efforts on the project; e.g. the modeling and simulation of linear and nonlinear dynamic systems and the application and simulation of ES. Other interactions included discussions related to graduate studies, and life outside of work.

As part of the LADSS project Chriss showed the will and determination to extend his knowledge of feedback control to include ES, doing so on a truncated schedule that involved my mentoring and his self-study instead of formal coursework. He had some difficulties with learning the fundamental theory and implementing the control scheme in simulations, but ultimately had success. It seemed that he wanted to reach the end-goal of applying the controller to the tunable energy harvesting experiment but without appreciating the levels of effort and understanding that it takes to get an advanced control scheme to work properly on more simple problems. It took repeated mentoring efforts to help Chriss work through basic implementations, and sanity checks of his work, in order to prepare him for simulations including a model of the actual experiment. In hindsight I could see how Chriss would push to solve the big problem, without tackling the small steps leading up to it, simply due to the project schedule. But I also believe that Chriss, like most undergraduate students, did not appreciate the value of tackling small problems while building-up to solving the ultimate goal. That said, he still has the motivation to work through such experiences and mature into a successful research engineer.

During the LADSS project Chriss also demonstrated the ancillary skills that are critical to being successful in the field of engineering. His presentations and reporting for the project showed that he has the written and oral skills needed to interpret and communicate results. Furthermore, his LADSS team interactions showed maturity in navigating complicated team dynamics while respecting opinions of the other group members and not letting issues interfere with his, or the team, efforts.

In regards to his academic history, he has already been engaged in various engineering related efforts and he is genuinely enthusiastic and motivated about continuing to do so through graduate school and beyond. His academic standing is very good given the workload that is typical for an

undergraduate engineering degree program and given that he has gone beyond that typical workload to include internships, team projects, and professional development through participation with engineering societies and related workshops. Furthermore, his achievements are bolstered by research and publication efforts worthy of a post-bachelor student. Chriss has gained a well-rounded background consisting of theoretical, analytical, and applied engineering that is suited to research and development efforts. Based on my interactions with Chriss and on his academic history, I believe that he has excellent potential for success in his future academic and professional endeavors in engineering. He ranks in the top 20% of the 12 students I have mentored in LADSS or other summer projects over the last six years.

Antranik A. Siranosian
Research & Development Engineer
Weapon Systems Engineering Division
Los Alamos National Laboratory

Title

Professor and Chair

Department

Mechanical Engineering

Waive of Access

Yes

Letter of Recommendation

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Ability Rating

Superior (Top 5%)

Institution

University of California, Riverside

Phone

951-827-7717

Sent At

11/28/2016 10:46 PM

Received At

11/29/2016 9:35 AM

Potential Rating

Extraordinary (Top 1%)



Mechanical Engineering
900 University Avenue
Riverside, CA 92521
Tel 951.827.5830
Fax 951.827.2899
www.me.ucr.edu

November 29, 2016

UCSD Mechanical and Aerospace Engineering Department
0411 UC San Diego 9500 Gilman Drive
La Jolla, CA 92093-0411

To whom it may concern,

It is my great pleasure to recommend Mr. Chirawat Chriss Sanpakit for admission to the Ph.D. program in the Mechanical and Aerospace Engineering Department at the University of California, San Diego.

As Professor and Department Chair of Mechanical Engineering at the University of California, Riverside, I have the opportunity to work with many students every year. Among these students, only a few truly stand out to me. Mr. Sanpakit has performed extensive research over the course of his undergraduate career and has had several conference presentations and publications to show—quite unusual for a student at his stage. To name a few: he has successfully conducted research at the Los Alamos National Laboratory using optimal control techniques on nonlinear systems. He has also conducted research with the Coast Guard Research and Development Center under a fellowship with the Department of Homeland Security. Here, Mr. Sanpakit traveled to Alaska and performed field studies on unmanned aerial vehicles for search and rescue in arctic conditions.

In addition to his interests as an aspiring researcher, I have personally come to know Mr. Sanpakit through his enthusiasm, charisma, and passion for outreaching to our students, particularly underrepresented communities. I myself work closely with Mr. Sanpakit every quarter to discuss the concerns of our engineering students and make changes to our program as a result. As current president of our chapter's American Society of Mechanical Engineers, Mr. Sanpakit leads a team to volunteer in speaking to K-12 students in our community, in mentoring incoming freshman in our college, and in holding educational workshops. In fact, Mr. Sanpakit will be teaching a formal class on MATLAB where students can earn credit this upcoming year.

Mr. Sanpakit's leadership, ambition, and desire to positively impact the lives of others is further exemplified through his educational outreach program, Dare to Create (www.dtcrriverside.org). Funded by the very prestigious Donald A. Strauss Scholarship. Mr. Sanpakit leads a group of volunteers every week to work with underrepresented high school students, where they collaborate to engineer products that help our society. Through this, he also provides tours, guest speakers, scholarship opportunities, and has expressed interest in growing this program into a non-profit organization.

Based on all these assets, I believe that Mr. Sanpakit has an extraordinary potential to succeed as a future scholar and I am convinced he will thrive as an excellent graduate student in your program. He possesses a remarkable passion for diversifying STEM as well as a desire to inspire his peers. He has clearly demonstrated that he can work and effectively communicate in a multidisciplinary team, with diverse views and perspectives and to conduct novel research at the highest level.

Needless to say, Mr. Sanpakit is among our very best students and I am sure that you will find him to be a student whose talents are a wonderful asset to your graduate program. Furthermore, he brings a positive attitude and an empathy for others that would be a wonderful addition to any campus community. If you would like to further discuss Mr. Sanpakit's capacity as a graduate student, please do not hesitate to contact me.

Sincerely,



Guillermo Aguilar, Ph.D.
Professor and Chair
University of California Riverside
Department of Mechanical Engineering
A-345 Bourns Hall
Riverside CA, 92521
Off: 951-827-7717
Lab: 951-827-2022
Fax: 951-827-2899
gaguilar@engr.ucr.edu
<http://www.engr.ucr.edu/~gaguilar>

Title

Professor

Department

Mechanical Engineering

Waive of Access

Yes

Letter of Recommendation

View



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Ability Rating

Extraordinary (Top 1%)

Institution

University of California, Riverside

Phone

951-827-2445

Sent At

11/21/2016 1:13 AM

Received At

11/22/2016 7:42 PM

Potential Rating

Extraordinary (Top 1%)



DEPARTMENT OF MECHANICAL ENGINEERING

RIVERSIDE, CALIFORNIA 92521
TELEPHONE: (951) 827-5830
FAX: (951) 827-2899

Riverside, November 21, 2016

Dear Ladies and Gentlemen,

It is a great pleasure for me to write this letter in support of Mr. Chirawat Sanpakit's application for UCSD's graduate program. I have to start by saying that Chirawat is the most exceptional student I ever encountered. As you can see from his transcripts and CV he is academically super strong. But that is not all. In addition to academic capabilities Chirawat's personality combined with his enthusiasm for science and public service makes him extraordinary. Moreover, his disadvantaged background makes him a role model for countless young people that struggle from early age.

We are doing our best to keep him in our graduate program but Chirawat believes that UCSD program is the perfect match for him.

Chirawat shared with me his enthusiasm about UC San Diego. According to Chirawat, UCSD, by far, has the most amount of faculty members and research that fit his overall interests. With work that spans the intersection of robotics and fluid mechanics, robotic networks, and controls, he would be absolutely elated to be accepted to the Department of Mechanical and Aerospace engineering. More concretely, Professor Bewley, Cortes, Martinez, and Krstic focus heavily on his field of interests. Having the opportunity to speak to many staff members at Los Alamos National Laboratory (as well as being mentored by Professor Krstic's past PhD student), Chirawat has gained a sense of the institution and feel very strongly that this would be an excellent place to continue his studies.

My first contact with Chirawat was in a freshmen class, Introduction to Mechanical Engineering, in the Winter quarter of 2013. This is a rigorous class with a low passing rate. Chirawat was among the few outstanding students with excellent grades. Our interactions at that time were mostly during office hours. This was enough to see that Chirawat is an outstanding student. In the following quarter, Spring 2014, he approached me and asked me to join my research group as an undergraduate assistant and I gladly accepted him in the team. I put him on my fire propagation project. Chirawat did not disappoint and quickly became an indispensable member of the lab. He proved to be reliable, motivated, energetic, and quick to learn and apply the knowledge in executing as well as in interpreting experiments. And his personality fits the team work.

Chirawat presented his results at the Southern Californian Conference of Undergraduate Research (SCCUR) and later on a few more occasions. He was excellent in presenting as well as in handling questions although this was his first ever conference appearance and he is only a

sophomore. The recording of one of his SCCUR presentation is available here: <https://www.youtube.com/watch?v=1XpF9SUQ1nk&list=UU0AF0ZsPVX-fPIR2WpEHYw>

Based on the presented research, Chirawat submitted a manuscript to a journal and the manuscript was accepted for publication with only minor revision. His writing skills are equally good as his technical and presentation skills. Chirawat's article can be found here (pages 123-129): http://ssp.ucr.edu/journal/volumes/uge_journal_vol_ix.pdf

Chirawat spent Summer 2015 attending the Department of Homeland Security HS-STEM Summer Internship Program. He spent part of the internship at the Research and Development Center in Connecticut and part in Alaska. It is my understanding that during the internship he worked with many organizations (including NOAA, Aerovironments, NSF, ConocoPhillips, NASA, SPAWAR, and Office of Naval Research) to gain an understanding of each research as well as how they benefit the coast guard and the center. His primary work/research focused on the Unmanned Aerial System missions. He presented part of his project at the conference. The presentation can be seen here: <https://www.youtube.com/watch?v=ACwJz6Lkq4w>

With no doubts, Chirawat is academically outstanding and I was hoping to keep him in my lab throughout his education but his interests are in robotics. Following this passion, he applied and was awarded a Summer 2016 internship at Los Alamos National Laboratory where he worked on feedback control systems. This internship further enhanced his enthusiasm for robotics.

Chirawat shared with me his passion for the public service. Something not found commonly in engineering students. Even before joining university, he was engaged and as the Peer College Counselor – he was helping other students with college applications and other college related topics, including major selection. He also visited elementary schools to give presentations about engineering to inspire elementary school students to consider engineering as a career in the future. Here at UCR, in addition to classwork and research in my lab, he is very active in professional clubs and leads UAV and Rocket project. He is equally passionate about all and has excellent time management skills.

Knowing this, it did not come as surprise when Chirawat approached me with his idea about “Dare to Create” project. Energetic as always, he was explaining to me his vision on how to engage high school students from our region, Inland Empire, in makers’ activities that would prepare them for careers and universities. Chirawat proposed his idea to the Donald A. Strauss foundation and was awarded funds to engage with high school students and local maker’s space. He feels very passionate about this project and really wants to make a difference in the region. I, as a faculty in the Mechanical Engineering, am convinced that the proposed activities are well past due for our community. There is a need for a long term program that will bring young people, especially underrepresented minorities, closer to engineering careers. Chirawat’s “Dare to Create” project is the perfect jump start of such long term program. More on his project can be found on his website: www.dtciverside.org

The thought that a young person with Chirawat’s qualities due to his disadvantaged background can easily fall into cracks and stay without university education (Chirawat himself had struggle in high school) gives me chills. Fortunately, with more success stories, role models and outreach services that Chirawat exemplifies probability of such unfortunate events is decreasing.

I foresee a very successful graduate studies for him. He sees himself as a researcher in a government lab or at a research university. He also feels passionate about sharing knowledge which, combined with his excellent communication skills, will make him an excellent teacher.

Knowing his performance in class, in my research team, DHS and LANL summer internships, as well as his excitement about public service as evident through his Dare to Create project I recommend him most enthusiastically for the admission to your graduate program. I am convinced that as always, Chirawat will exceed expectations.

In addition to his academic qualities, Chirawat is a well-mannered and very pleasant young man. He will make us all proud. He has my strongest endorsement and I am looking forward to learn about his future endeavors. If I can be of any assistance in considering his application, please do not hesitate to contact me.

Sincerely,



Marko Princevac
Interim Associate Dean, Bourns College of Engineering
Professor of Mechanical Engineering
Winston Chung Hall 453
University of California
Riverside, CA 92521
Phone: 951 827-6106
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Statement of Purpose

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Statement of Purpose – Department of Mechanical and Aerospace Engineering, UC San Diego
Chirawat Chriss Sanpakit (csanp001@ucr.edu)

I want to pursue a Ph.D. to advance research and development in autonomous systems that can coordinate, adapt to uncertain conditions, and that can work collaboratively with humans. In particular, I want to accomplish this by leveraging controls, dynamics, and possibly even machine learning. Upon graduation with a Ph.D., I would like to pursue an academic position at a research institution to further the state of knowledge and technology of robotics. My motivation to pursue this field stems from my research experiences, first in the Laboratory for Environmental Flow Modeling, then at the United States Coast Guard Research and Development Center and finally at the Los Alamos National Laboratory.

I began research with Professor Marko Princevac in the Laboratory for Environmental Flow Modeling. We worked with the USDA Forest Service Pacific Southwest Research Station to conduct live burn tests on chaparral shrubbery to understand crown wildfire dynamics. I developed computational fluid dynamic models and analyzed videos from the different wildfire trials. From the simulation and the actual experiments, I determined fire velocities, heights, and pinpointed patterns in the videos that I later correlated to specific test parameters. I detected an anomaly in our expected results that led to the development of new experiments to quantify wildfire propagation based on the bulk density of the vegetation. I presented my results at the Southern California Conference for Undergraduate Research (SCCUR) 2014, the 2014 UCR Mechanical Engineering Graduate Symposium, the 2015 UCR Undergraduate Symposium, and published the results in the *UCR Undergraduate Research Journal* (also made available on the US Forest Service Website)³. These results also led into later studies on crown wildfires which colleagues used in their presentations at the Western States Section of the Combustion Institute, at the Southern California Flow Physics Symposium, and at the SHPE National Conference¹. As a result of this experience, I became interested in uncertain or extreme environments, especially in augmenting human capability with robotic systems and began seeking further knowledge and opportunities in this area.

I conducted my second research project with the United States Coast Guard Research and Development Center (RDC) through the Department of Homeland Security STEM Fellowship Program. I traveled to Alaska, boarded the Coast Guard Cutter HEALY—a 420ft icebreaking ship dedicated to high latitude research—and participated in the NSF supported Arctic Technology Evaluation 2015. I worked with a multi-disciplinary team from agencies across the United States (such as NOAA and NASA) to evaluate the viability of unmanned aerial systems (UAS) for search and rescue (SAR) in the Arctic. We conducted field tests of UAS over Arctic ice off the coast of Oliktok Point, AK, located a target, and cued helicopters from shore to simulate a rescue. Additionally, we explored the possibility of autonomous landing on the ship and evaluated the ability of the system to compensate for ship bobbing and for wind. Our work was very well-received by the RDC and has since inspired further research into unmanned systems in the Arctic during the summer of 2016. I later presented my work to the RDC and at SCCUR 2015. Seeing researchers from different parts of the world collaborating to contribute to the safety of mariners in the Arctic confirmed my desire to pursue an advanced degree in a field in which robots and autonomous agents could work with humans in novel ways to extend their ability to deal with harsh and uncertain conditions. More importantly, the experience I gained from working with scientists

and engineers from all over the world in Alaska exposed me to the potential of research to impact lives on a national or even international level.

My most recent research experience was at the Los Alamos National Laboratory (LANL) under the guidance of Dr. Scott Ouelette and Dr. Antranik Siranosian. Through the 17th Dynamic Summer School, I worked with another mechanical engineer and a mechatronics engineer to develop an adaptive feedback control system to expand the capabilities of vibrational energy harvesters (VEH) in stochastic environments. Our system took in voltage measurements from the VEH and utilized Extremum Seeking Controls to optimize the voltage being produced, given any excitation frequency. The system then augmented the performance of the piezoelectric crystal being used to generate energy and resulted in vibrations beyond the traditional capabilities of the material. The results of this research could have far-reaching implications in fields such as wireless technology and structural health monitoring. As a result of this experience, I had the opportunity to collaborate with an interdisciplinary team to assimilate literature and develop MATLAB simulations that were used to study the performance of our control system before implementing it on the actual experimental setup. In the process, I saw the importance of modeling dynamic systems when applying control laws as well as the challenges of moving from simulations to actual testing. For example, the results from experimentation were affected by material fatigue, equipment limitations, or assumptions we made in our simulations. Nevertheless, this experience at LANL reinforced my desire to pursue an advanced degree and has resulted in a conference paper for the 35th International Model Analysis Conference².

My research experiences have inspired me to explore ways to increase the capabilities of single-agent or multi-agent teams. Although autonomous systems, like self-driving cars, have begun to emerge in modern society, how they perform or coordinate in unknown environments and how humans can intuitively interact with them is still an area of active research. I seek to add to this growing body of knowledge and create robots that will benefit society. More concretely, I want to leverage techniques such as controls, dynamics, or machine learning to research new methods for improving these systems and to extend the reach of humans in disaster response, space, medicine, or other challenging environments.

Having worked at the Engineering Institute at the Los Alamos National Laboratory, I have had the opportunity to interact with many researchers who conducted their graduate studies at UCSD. As a result, I learned about the work being done at the University and my own fit for the institution. In particular, I find the work being done by Professor Martinez, Professor Cortes, Professor Bewley, and Professor Krstic to be exciting and relevant to my research interests. After reading papers and exploring the work of these Professors, I believe that UCSD is the ideal place to pursue my Ph.D.

Publications: [1] J. Cobian-Iñiguez, C. Sanpakit, J. Chong, G. Burke, G. Dupont, DR. Weise, M Princevac, Laboratory Experiments to Study Surface to Crown Fire Transition in Chaparral, Western States Section of the Combustion Institute, Provo, UT, October 2015. [2] R. Gaspar, M. Mascareñas, C. Sanpakit, S. Ouelette, A. Siranosian, Feedback Control of Modulated Inertial Generators for Energy Harvesting Applications, International Modal Analysis Conference, Garden Grove, CA, February 2017. [3] Sanpakit, C., S. Omodan, D. Weise, M. Princevac, Laboratory Fire Behavior Measurements of Chaparral Crown Fire, *UCR UGRJ*, 9, 123-129, 2015.

CV/Resume

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Curriculum Vitae

Chirawat Chriss Sanpakit

Arleta, CA | 818-284-5094 | csanp001@ucr.edu

Education

University of California, Riverside

B.S in Mechanical Engineering expected in Spring 2017, GPA 3.69/4.00

Research Interests

My interests lie in controls, dynamics, and their applications to robotics. Of particular interest is the ability for these systems to coordinate, adapt to uncertain environments and to work collaboratively with humans.

Research Experience

Laboratory for Environmental Flow Modeling, Riverside, CA

Mar 14 – Present

Undergraduate Researcher, University of California, Riverside

- Researched wildfire dynamics by conducting live burns inside of a wind tunnel and aided in the development of computational fluid dynamic models
- Studied the effects of air lubrication on hydrokinetic turbines, with applications to reducing drag for increased energy harvesting efficiency

Los Alamos National Laboratory, Los Alamos, NM

Jun 16 – Aug 16

Dynamics Summer Research Fellow - Los Alamos Dynamics Summer School

- Conducted research with a multidisciplinary team to allow nonlinear vibrational energy harvesters to adapt to stochastic environments via feedback control methods
- Implemented Real-time Optimization through Extremum-Seeking Controls in experiments using Simulink Desktop Real-Time
- Developed simulations on MATLAB/Simulink and conducted parametric studies to better understand the dynamics of our system

Coast Guard Research and Development Center, New London, CT/AK

Jun 15 – Aug 15

Unmanned Systems Intern – DHS-HS STEM Summer Internship

- Traveled on Coast Guard Cutter HEALY in Alaska to evaluate the applicability of unmanned aerial vehicles for search and rescue in Arctic conditions
- Assisted in the development of a Wave Glider's object avoidance system through field tests and methods of computer vision
- Began a Cooperative Research and Development Agreement to leverage unmanned systems for increased maritime domain awareness

Grover Laboratory, Riverside, CA

Jun 14 – Jan 15

Parts Specialist, University of California, Riverside

- Designed 3-D printed parts in support of the Multifluidic Evolutionary Components (MEC) system, a lego-like, adaptable bioinstrumentation tool
- Worked collaboratively with a team of undergraduates to develop schematics that integrate fluidic, electrical, and mechanical systems

Publications (Journal)

1. Sanpakit, C., S. Omodan, D. Weise, M. Princevac, Laboratory Fire Behavior Measurements of Chaparral Crown Fire, UCR Undergraduate Research Journal, Riverside, CA, 123-129, 2015.

Publications (Conference)

1. R. Gaspar, M. Mascareñas, C. Sanpakit, S. Ouelette, A. Siranosian, Feedback Control of Modulated Inertial Generators for Energy Harvesting Applications, International Modal Analysis Conference, Garden Grove, CA, February 2017
2. J. Cobian-Iñiguez, C. Sanpakit, J. Chong, G. Burke, G. Dupont, DR. Weise, M Princevac, Laboratory Experiments to Study Surface to Crown Fire Transition in Chaparral, Western States Section of the Combustion Institute (WSSCI), Provo, UT, October 2015

Conferences (Presentations/Proceedings)

1. T. Lam, C. Sanpakit, B. Sommerkorn, M. Princevac, Augmenting the Capabilities of Hydrokinetic Turbines Through Air Lubrication, Southern California Conference for Undergraduate Research (SCCUR), Riverside, CA, November 2016
2. J. Cobian-Iñiguez, A. Zuniga, AH. Amnifar, C. Sanpakit, J. Chong, G. Burke, DR. Weise, M. Princevac, Surface to Crown Transition and Spread Studies for Chaparral Crown Fire, Southern California Flow Physics Symposium (So Cal Fluids X), Irvine, CA, April 9, 2016.
3. C. Sanpakit, T. Lam, B. Sommerkorn, M. Princevac, Effects of Air Lubrication on Hydrokinetic Turbines, 10th Annual Undergraduate Research, Scholarship, and Creative Activity Symposium, Riverside, CA, April 2016
4. C. Sanpakit, S. Tripp, S. Dunn, D. Hastings, D. Decker, J. Story, R. Hansen, K. Higbie, M. Princevac, Leveraging Unmanned Aerial Systems to Expand Maritime Domain Awareness in Arctic Regions, Southern California Conference for Undergraduate Research (SCCUR), Claremont, CA, November 2015
5. A. Zuniga, J. Cobian-Iñiguez, AH Aminfar, C. Sanpakit, J. Chong, G. Burke, G. Dupont, DR Weise, M. Princevac, Laboratory Modeling of Chaparral Crown Fires, SHPE National Conference, Baltimore, MD, November 2015
6. C. Sanpakit and M. Princevac, Laboratory Fire Behavior Measurements of Chaparral Crown Fire - Comparison Between Laboratory Results and Numerical Model, UCR's Ninth Annual Symposium for Undergraduate Research, Scholarship, and Creative Activity, Riverside, CA, April 2015.
7. C. Sanpakit, R. Bradshaw, R-D. Delgadillo, L. Hakimi, J. Malagon, S. Omodan, R. Torrento, C. Bartolome, and M. Princevac, Laboratory Fire Behavior Measurements of Chaparral Crown Fire - Experimental Setup and Ignition Experiments, Southern California Conference for Undergraduate Research (SCCUR), Fullerton, CA, Nov. 2014.
8. R. Bradshaw, R-D. Delgadillo, L. Hakimi, Y. Jiang, J. Malagon, S. Omodan, C. Sanpakit, R. Torrento, C. Bartolome, and M. Princevac, Laboratory Fire Behavior Measurements of Chaparral Crown Fire - Initial Laboratory and Model Results, MEGSA Symposium, Riverside, CA, May 2014

Honors and Awards

2016 – 2017 Donald A. Strauss Scholar (\$10,000) Donald A. Strauss Foundation, Irvine, CA	April 2016
ASME William J. & Marijane E. Adams, Jr. Scholarship (\$3000) ASME International Scholarship Committee	June 2016
University Honors Scholarship (\$1500) UCR University Honors, Riverside, CA	Feb. 2015
Hispanic Serving Institute, Undergraduate Research Stipend (\$3600) Bourns College of Engineering, Riverside, CA	Oct 14 – Sept 15
Research and Creative Activity Mini Grant (\$1500) UCR Undergraduate Awards, Riverside, CA	June 2015
Most Innovative – Equipo Vision Entrepreneurial Award (\$1000) Citrus Hack, Riverside, CA	Oct 2016

Leadership and Professional Services

President of ASME at UCR; previously Secretary and Vice President	Sept 2014 – Present
Golden Key Honor Society, National Member	Jan 2016
ASME National Member (Student)	Aug 2016

Future/Past Teaching Activities (Courses/Workshops)

Introduction to MATLAB and Programming Logic (1 Unit Course) University of California, Riverside, R – Course	Jan – March 2017
Introduction to MATLAB Workshop Series ASME at UCR, Riverside, CA	Sept – Nov 2016
Programming Arduino Based Mobile Robots Workshop IEEE at UCR: Merit Badge Day, Riverside, CA	April 2016
Engineering Ethics Workshop IEEE at UCR: Merit Badge Day, Riverside, CA	April 2015

Undergraduate Team Projects

Unmanned Aerial Vehicle Team at UCR Wing Team – Control Surface Lead	Dec 2013 – May 2015
<ul style="list-style-type: none">• Conducted computational fluid dynamic analysis to determine optimal wing design for the purposes of the competition• Developed numerical simulations on MATLAB of the UAV's dynamical response given a certain dimension of the plane's control surface	
Rocket Team at UCR Recovery Team - Member	June 2014 – Dec 2015
<ul style="list-style-type: none">• With a team of students, developed and tested the recovery system of the rocket by using video analysis to determine descent velocity• Designed the schematic of the rocket's ignition system	

Letter of Exception

File not uploaded.

Letter of Financial Support

File not uploaded.

Additional Documents

No additional documents.

External Links

No external links.

Graduate Division Diversity Essays

What significant and unusual educational, social, cultural, economic, or other barriers have you overcome in pursuit of your education? Describe the challenge as well as any unique insights, perspectives or skills you gained while overcoming this challenge. Describe how overcoming the aforementioned challenge will enable you to contribute to the campus community in a unique and positive manner that enhances campus diversity. Please provide your answer in a PDF document.

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How have you demonstrated a commitment to diversity in the past, and how would you work to increase campus or departmental diversity at UCSD? Describe personal experiences, contributions, commitments, and impacts that demonstrate your commitment to improving educational access or quality of life for diverse groups. Please provide your answer in a PDF document.

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Additional Information

Sponsoring Organizations

Have you applied to or will you receive third-party sponsorship (or outside fellowship) for your educational expenses from any of the following?

None of the above

Last 6 Months Activity

If more than six months have elapsed since the date of your last university enrollment, please describe what you have been doing.

Graduate Preparation Programs

Have you participated in any of the following graduate school preparation programs or summer research programs?

UCSD's Graduate Programs

How did you learn about UCSD's graduate programs?

Faculty/Staff at your current institution, Graduate/Professional School Fair, UCSD Alumni, UCSD Faculty, UCSD Program Brochure, UCSD Website

List other college, university, institutions or organizations to which you are applying for admission or financial support.

UCLA, UC Berkeley, UC Riverside, UC Irvine, MIT, Cornell, Caltech, Carnegie Mellon, Stanford

Reviews

Reviewer	Rating	Comments
Miroslav Krstic	3.0	Another informative letter from Antranik Siranosian (LANL). It seems like Antranik ended up doing most of the work. The Q-GRE is a bit lower than we'd like it to be. The rest of the record looks fine.