WILL ENGINEER OF HAWAII

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Engineering students develop real-world solutions through industry-integrated courses

Students at UH Mānoa's College of Engineering don't just study theory and concepts – they roll up their sleeves and attack current challenges within our community. More and more, the college is pivoting to infuse industry-integrated courses into their four-year curricula, where, through the course of a semester, students are paired with local organizations to design and develop solutions to address actual problems.

Software development for enhanced checkin process

One such opportunity, the Community Innovation Mentorship Program (CIMP), was born through a collaboration between local company DataHouse, Transform Hawai'i Government, Hawai'i Technology Development Corp (HTDC), the State of Hawai'i Department of Agriculture, and the College of Engineering.

The program, under the umbrella of the TRUE Initiative, afforded a team of seven undergraduate computer engineering students the opportunity to tackle software development projects side by side with industry experts. The team started by utilizing tools and techniques to identify and refine problems, to which they then brainstormed and prioritized innovative solutions involving programming frameworks and methodologies, user authentication, technical architectural and database design, middle-tier business logic, and front end UI/UX frameworks.

Through the journey, the students were challenged to learn not just the technical skills of software development, such as JavaScript, Angular, Model-View-View Model (MVVM) software architecture and SQL database programming, but also the softer skills of working and collaborating in a team small enough to meet Jeff Bezo's "two-pizza team ideal. The CIMP program allowed these students to practice effective collaboration, a crucial skill that all aspiring software engineers need to cultivate early in order to accelerate their careers, by working together to build a solution for a real client.

That client was the Hawai'i State Department of Agriculture's Animal Quarantine (AQ) unit, and the problem at hand was one that their inspectors, pet caretakers, and the many pet owners experienced on a daily basis: the inefficiencies of the animal check-in process. Over the course of five months, the CIMP Team developed a new check-in process and queuing method for the Animal Quarantine Airport Station, featuring two large monitors and an iPad-driven kiosk check-in station that allows the AQ staff to utilize electronic devices to visually guide the processing of pets and pet



Graduates of the first Community Innovation Mentorship Program.

owners

Their solution also streamlined the staff's workflow with a new messaging system, providing a quicker means of communication between front inspectors and the back pet caretakers, and helped reduce pet owner anxiety by providing up-to-date information on their pet's status via an accompanying app. "It was encouraging to watch the successes and progress from the hard work of the UH students and mentors. The Community Innovation Mentorship Program works very well." said Dr Isaac Maeda, Administrator of the Animal Industry Division, which also includes the title of State Veterinarian of the Hawai'i Department of Agriculture (HDOA). The program concluded with a final team presentation and certificate ceremony at the Entrepreneurs Sandbox in Kaka'ako on May 18.

Machine learning for dental radiograph classification

At the graduate level, Dr. II Yong Chun's spring course, Computational Image Processing and Computer Vision, afforded students from various engineering and computer science backgrounds the opportunity to understand industrial demands and challenges found beyond the textbook through a flipped-classroom approach, culminating in a project with Hawai'i Dental Service (HDS).

Students focused on areas such as image restoration, image segmentation, and pattern

recognition, using algorithms, statistical modeling, and artificial intelligence (AI) to achieve their outcomes.

"EE616 targets graduate students who want to understand the mathematical foundations underlying computational data science solutions in image processing and computer vision and then eventually develop new solutions." said Chun.

In a modified version of the flipped classroom approach, Chun provided students with partial lecture notes in advance of the class, encouraging more student engagement during the allotted class time.

The final project, in partnership with Hawai'i Dental Service (HDS), put to use the students' enhanced understanding of image pattern recognition and machine learning, allowing them to develop, train, and test Al systems that can identify dental radiographs by those that do and do not indicate dental disease. Such software could prove helpful in assisting dental insurers to identify inaccuracies in insurance reporting, among other applications.

In the end, the data from HDS was not suitable for the project at hand, so students utilized a publicly available dataset to develop AI models that would accurately classify the radiographs. Amongst the results of the seven class members, the most accurate solution performed the task correctly 87.5% of the time.



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Additions and/or corrections to the Wiliki mailing list should indicate the proper society, institution or association. Corrections to email addresses should be submitted to your society coordinator.



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College holds first virtual Order of the Engineer oath ceremony

Students disappointed by the cancellation of traditional convocation and commencement ceremonies were excited to participate in a virtual Order of the Engineer oath ceremony, a first for the UH's College of Engineering.

About three-quarters of the nearly 200 Spring and Summer 2020 graduates logged in on May 15 to participate in a Zoom ceremony that was also streaming on YouTube Live to roughly 400 viewers and recorded for viewing on demand. Speakers included Assistant Dean Song Choi, Dean Brennon Morioka, UH Mānoa Provost Michael Bruno, Professor Roger Babcock, and

Engineering Alumni Association President Rodney Chong.

graduates. The some dressed in their graduation regalia, all the recited oath simultaneously through their home cameras and microphones, and later hollered and cheered as they transitioned from students to graduates and of members the professional

engineering community.

According to its website, the Order of the Engineer "was initiated in the United States to foster a spirit of pride and responsibility in the engineering profession, to bridge the gap between training and experience, and to present to the public a visible symbol identifying the engineer." All participants in the ceremony will receive the Engineer's Ring, a stainless steel ring worn on the fifth finger of the working hand that represents the engineer's professional obligation.



Students participating in the virtual Order of the Engineer Ceremony on Zoom.

Deadline for Wiliki is July 15th



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College surpasses \$100K goal in virtual banquet fundraiser

Like nearly all events since the arrival of COVID-19, the UH Manoa College of Engineering's 20th Annual Banquet that was to take place on April 22 never happened. The event - the college's largest event of the year that typically draws over 800 people - is traditionally the primary fundraiser for undergraduate student research projects, so its cancellation left students and staff alike nervous about limited funding opportunities in the year to come.

Additionally, with massive cuts to the university's general fund and tuition revenues projected, student projects are expected to rely more on financial support from sources outside of the university, like the industry partners that typically contribute to the banquet.

But social distancing did not stop the college from taking its fundraising efforts online with a "virtual fundraiser." The team set a goal of \$100,000 from those industry partners by April 22nd, which would have been the date of the banquet, with all contributions being 100% tax deductible.

Thanks to the college's dedicated community of supporters, fundraising efforts exceeded this

goal by bringing in \$119,850, generated through over 50 unique gifts coming from both organizations and individuals in amounts ranging from \$50 to \$5,000.

"We truly appreciate every effort, big and small, to support the College in these uncertain times," said Dean Brennon Morioka. "These monies will allow us to fund next year's round of student projects and activities to continue fostering learning, innovation, and professional development within our student population."



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Honolulu Building Code

The 2012 International Building Code was adopted into ordinance by the City and County of Honolulu on May 20, 2020. Enforcement of the new code by the Department of Planning Permitting is expected to start approximately August 20, 2020.

Membership

- Michelle Goo of Wiss, Janney, Elstner Associates, Inc. has been approved as an Associate member.
- Brian Sekiguchi of Ronald N.S. Ho & Associates, Inc. has applied for Affiliate membership. Please contact any SEAOH Board Member by August 1, 2020 with comments regarding the application.

Next Meeting on August 5, 2020. information, contact SEAOH President Danny Fujioka.



http://www.hawaiispe.org/

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As a member of the Board of the Council of Engineering and Scientific Specialty Boards (CESB), AACE International offers a range of certification levels from technician to professional to expertise level including CCT, CCP, CEP, EVP and PSP Certification Programs.

Congratulations to our newly elected 2020-2021 AACE Hawaii Section Board:

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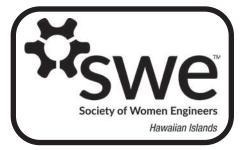
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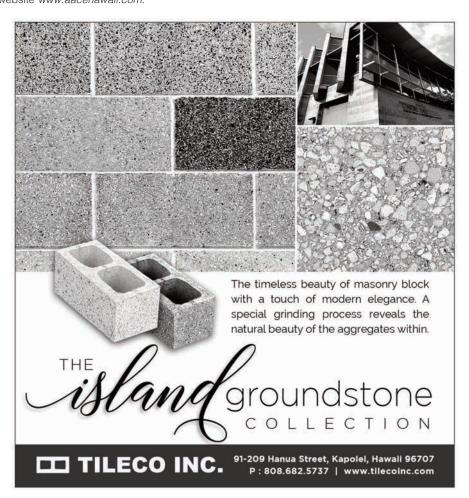
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EXECUTIVE COMMITTEE MEETING

Last held: June 2, 2020 Next meeting: July 9, 2020

ASCE HAWAII SECTION DINNER MEETING Program: T.B.D

The continued health and safety of our membership is our top priority and we will continue to monitor the COVID-19 pandemic. Future ASCE Hawaii events, including our section dinner meetings, are still temporarily on hold. We will keep you informed via e-blasts and/or notices posted on our website at ascehawaii.org when they will be scheduled. Please continue to stay safe, watch out for each other, especially our kupuna, and continue to be vigilant about best health practices.

Speakers: T.B.A

Date: T.B.A Location: T.B.A. Time: T.B.A TBA Menu: Cost: T.B.D

COMMITTEE POSITIONS

ASCE Hawaii is looking for volunteers to fill the following committee positions: One (1) Student Practitioner Advisor. If you are interested or have questions on any of these positions, please contact President Jason Kage, jkage@ascehawaii.org.

MEMBERSHIP

If you haven't already done so, please renew your ASCE membership. You can renew your membership at www.asce.org.

ASCE JOB LISTINGS

The following job listings are currently posted on the ASCE Hawaii Section website:

- AECOM (Civil Engineer II)
- Booz Allen Hamilton (Senior Civil Engineer and Wastewater Specialist)
- City and County of Honolulu (Civil Engineer III, IV, V, Mechanical Engineer V, & Electrical Engineer V)
- G70 (Civil Designer, Civil Engineer, Civil Project Manager, Construction Manager)
- HDR (Senior Civil Engineers, Senior Federal Manager, Project Manager Proiect Transportation Group, & Water/Wastewater Engineer)
- Hirata & Associates (Geotechnical/Civil Engineer – Project Engineer)
- Jacobs (Civil Engineer)
- Kennedy/Jenks Consultants (Project Manager, Staff Engineer for Honolulu Office and

Staff Engineer for Hawaii Office)

- Nagamine Okawa Engineers Inc. (Structural Engineer)
- PGH Wong (Change and Claims Manager, Change and Claims Specialist, Civil/Building Inspector, Office Engineer, & Scheduler)
- Stantec (Construction Compliance Monitor/Inspector, Document Configuration Specialist, Deputy Resident Engineer, Lead Engineer (Assistant RE), Lead Office Engineer, & Office Engineer)
- SSFM (Civil Engineer V, Structural Engineer
- US Army Corp of Engineers (USACOE) (Interdisciplinary Project Manager, GS-12)

For further information, please visit http://www.ascehawaii.org/job-listings.html.



Hawaii Section — Younger Member Forum Web site: http://www.ascehawaii.org/ymf.html

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YMF General Meeting

The next YMF general meeting is TBD. Please be sure to check out our website and social media channels for the most updated information. If you are interested in attending and learning more about the various professional, social and service opportunities available through YMF, please contact YMF at ymf.hawaii@gmail.com.

Gimme Gimme COVID-19 Edition

On May 20th, 12 of our ASCE YMF members joined together on zoom for our first ever virtual social event, Gimme Gimme COVID-19 Edition. The participants readied themselves for an epic battle of Gimme Gimme to search their homes for more than 20 COVID-19

essential items, in order to win the prize! Shane made the biggest comeback of all time to secure his victory with four total points. The members shared some laughs and stories about their lives during quarantine and got some good exposure to socializing.

Thank you to all the participants for their positive attitudes during some dark times!



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The 2020 ITE International Annual Meeting will be going virtual. The online meeting will be held on August 4-6, 2020. Registration is currently open. For additional information please visit the meeting website at: https://www.ite.org/eventsmeetings/ite-virtual-annual-meeting-andexhibition/.

If you would like to be add to the ITE mailing list, please email Jasmine Teramae-Kaehuaea at jkaehuaea@atahawaii.com.



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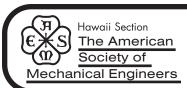
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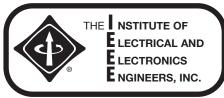
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EAH's meeting location is Room 301 in the Topa Tower downtown Honolulu 745 Fort Street. Validated parking is available (enter from Nimitz). Visit eahawaii.org for directions and a map and any Program schedule or meeting location updates.

Meetings are held 2 times per month on Fridays. Meetings start at NOON and have ended PROMPTLY at 1:00 pm for over 110 years.

All are Welcome, Lunch is \$10.00 for Members. \$12.00 for guests and \$5.00 for students. Drinks and refreshments are complimentary. Brown baggers welcome. \$2.00 donation is gratefully appreciated if not having lunch.



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