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RESEARCH

Engineering professor Leung Tsang elected to the National Academy of Engineering

by Michal Ruprecht
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Leung Tsang, professor of electrical engineering and computer science, was **elected** to the National Academy of Engineering last week. He joined the 2020 class of 106 new NAE members.

According to the NAE **website**, one of NAE's goals is to provide advice from eminent engineers to the federal government on issues related to engineering and technology. Members are **elected** by current NAE members and the "election to membership is one of the highest professional honors accorded an engineer."

"I was very happy," Tsang said. "It is a great honor to be elected a member of NAE. When my students, postdocs and collaborators learned about this, they were also very happy as our years of hard work are being recognized."

According to Alec Gallimore, dean of the College of Engineering, there are 2,590 individuals in NAE, with 35 members from the University of Michigan. Gallimore wrote in an email to The Daily the achievement is prestigious and marks the College of Engineering as one of the best in the country.

"Election to the NAE is among the highest honors accorded in our profession. Any time one of our professors receives this honor, it is cause for celebration," Gallimore said. "Professor Tsang's election … places us

among the top colleges of engineering in the country.”

Rackham student Jiyue Zhu, who is in Tsang’s research group, said he felt honored to study under Tsang.

“I think it really was amazing,” Zhu said. “When I heard this news, I was quite surprised. I’m so excited because it’s such a big honor for engineers and I also think this is an honor for me as a Ph.D. student to study under his guidance.”

According to the NAE **website**, Tsang was elected for his analysis of global monitoring data from microwave sensors mounted on satellites. Gallimore said Tsang is a world-renowned expert in the field.

Tsang said his research develops theoretical models for measuring soil moisture, terrestrial snow, vegetation and cryosphere climate. He highlighted some applications of his work that include deep subsurface temperature profiles of polar ice sheets, thicknesses of sea ice and salinity of ocean in polar regions. These applications could be used to assess climate change.

“Over the years, we have developed new physical wave-scattering models that differ from traditional models,” Tsang said. “These new physical models have major impact on data analyses, parameter retrieval algorithms and designs of instruments for new satellite microwave remote sensing measurements.”

Zhu said the honor presents Tsang with the opportunity to mentor a new generation of students. He said this can also bring more attention to this field of study.

“I think this makes more people recognize his work,” Zhu said. “I think more graduate students in the future can get interested in the remote sensing area. If more students join our research group and our studies, he can definitely be a good mentor to have this new generation of students.”

Tsang mentioned his research is in parallel with a recent **report** from The National Academies of Sciences, Engineering and Medicine. The report sets forth goals and priorities for space-based science programs. Tsang said his research group is working on some of these goals.

Tsang said he hopes the election to NAE propels his research group to continue to contribute to the field of theoretical and computational electromagnetics.

“The election encourages myself, my students, postdocs and collaborators … to make research progress and technology implementation for satellite missions of earth environmental monitoring for the benefits of humanity,” Tsang said.

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