March 18, 2019

Alex Liu and Yadu Pokhrel presented the 2019 Withrow Distinguished Scholar Awards

For demonstrated excellence in scholarship, Alex Liu and Yadu Pokhrel were recognized March 15 during the 2019 Engineering Awards Luncheon at Michigan State University.

Liu, professor of computer science and engineering, was honored with the 2019 Withrow Distinguished Scholar - Senior Award.

Pokhrel, assistant professor of civil and environmental engineering, was recognized with the 2019 Withrow Distinguished Scholar - Junior Award.

The two honors recognize faculty members who have demonstrated excellence in scholarship. Department chairpersons submit nominations to the associate dean for research, who makes final selections in consultation with the Engineering Research Committee. Each nomination must be supported by letters of endorsement from professional peers and former and current students, including at least two letters from eminent external professional peers.

2019 Withrow Distinguished Scholar - Junior Award - (Nominees have been in service to the university as instructors, assistant professors, or associate professors for not more than seven years.)

Pokhrel is an internationally recognized researcher in the area of large-scale hydrology and water resource modeling. In particular, he is well known for the pioneering work he has done in improving global hydrological models to include human water management activities, and for his significant contributions to advancing the field of human-climate interactions.

He has quickly become an internationally recognized researcher in large-scale hydrology and water resource modeling. In particular, he is well known for his work in improving global hydrological models to include human water management activities, which are the major drivers of hydrologic change in many regions around the world. He has also contributed significantly to advance the field of human-climate interactions by improving land surface schemes in global climate models. He is recognized internationally for his finding, published in *Nature Geoscience*, that
groundwater withdrawn from deep aquifers over the past century contributed significantly to global sea level rise.

A renowned global leader in the field, Bridget Scanlon from the University of Texas at Austin, writes, “Given Yadu’s current strong international reputation in global modeling, water resources, and research in critical basins, such as the Amazon, I have no doubt that Yadu’s trajectory in hydrologic sciences will continue to rise and he will be a global leader in the field.”

He has published 41 peer-reviewed articles (32 journal papers, two book chapters, and 7 peer-reviewed conference proceedings). Notably, four of the journal articles are published in Nature journals, specifically Nature Geoscience, Nature Communications, and Scientific Reports. Dr. Pokhrel’s research has been featured in dozens of national and international media outlets including the Guardian, Scientific American, ABC Science, The China Post, The Indian Express, and Japan Times, as well as on the website of the European Union and UNESCO Global Water Forum, and the BBC World Service Radio.

**Senior Award** - *(Nominees have been in service to the university for more than five years and hold the rank of professor)*

Liu is an internationally renowned researcher in the fields of networking and security. His work has had profound impact on both academia and industry. His papers have been used as course materials in top universities, and his work has served as building blocks for other researchers. His work has been adopted by such industry leaders as WordPress, RedSeal, and the IETF MPTCP Working Group.

He has received a total of $7.16 million in extramural grants, including 12 grants from the National Science Foundation, accounting for 83.3 percent of his funding. He is the lead PI for 9 of the 12 NSF research grants - including an NSF CAREER Award in 2009. He holds 14 US patents with another pending. He has published 3 books, and more than 100 journal and 150 conference papers. His Google Scholar citations stand at more than 19,000, with an H-index of 52.

His research focus is on designing efficient algorithms and effective protocols for securing the Internet includes:

- designing network security algorithms,
- design of security policies,
- generation of malware signatures,
- analysis of security policies,
- execution of security policies,
- designing secure network protocols,
- multi-path TCP protocols.
His contributions to the education of students has yielded extraordinary results. He has graduated eight PhD students, of which five have won the College of Engineering Fitch H. Beach Outstanding Graduate Student Award, two have won the CSE Outstanding Graduate Student Award, and one has won the CSE Outstanding Teaching Award.

Eminent colleagues said: “His publication record is comparable to the best in the field anywhere and better than anyone I know in my own department in recent years.” “There are very few researchers with that capability...Alex is an overachiever and world class researcher.”

Perhaps his most notable endorsements, however, come from his former students. “Dr. Liu is the best mentor that I have had in my life, and I owe any successes that I have had until now to him.”

Related Website: Communications contact: Patricia Mroczek

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