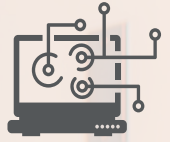


THE FUTURE IS WHAT WE DO

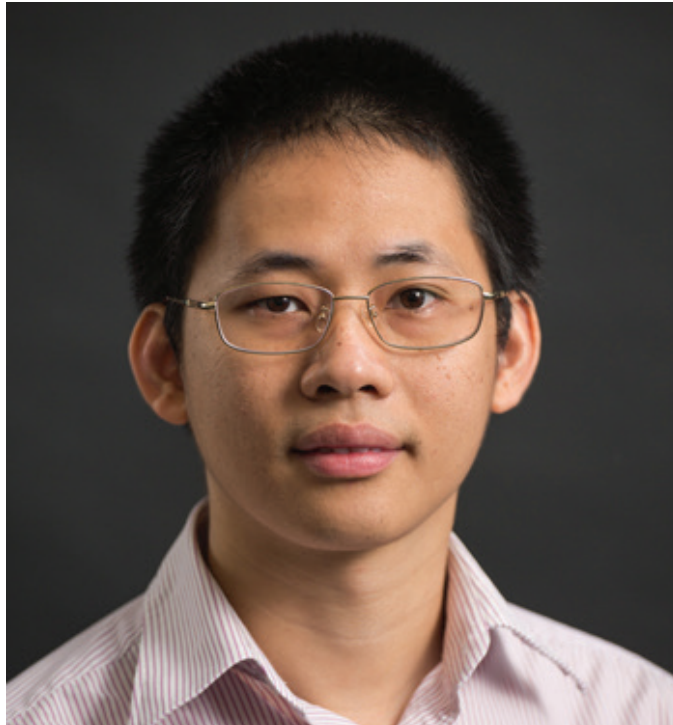


**RESEARCH MILESTONES IN
ELECTRICAL & COMPUTER
ENGINEERING**

UNIVERSITY of **HOUSTON** | ECE

UH Engineer's Research on Adaptive Machine Learning **WINS NSF AWARD**

Hien Van Nguyen, assistant professor of electrical and computer engineering at the UH Cullen College of Engineering, wants to advance machine learning algorithms to go beyond generalizations and respond appropriately when situations change. The National Science Foundation awarded Nguyen a two-year, \$225,000 grant for a related research project titled "Active and Rapid Domain Generalization." The main goal of this project is to develop technologies that will help machine learning models adapt to changes without having to collect a lot of data and without having to take the machine offline to retrain the models from the beginning. The need for adaptability exists across different fields – from the medical sector to offshore oil and gas operations.

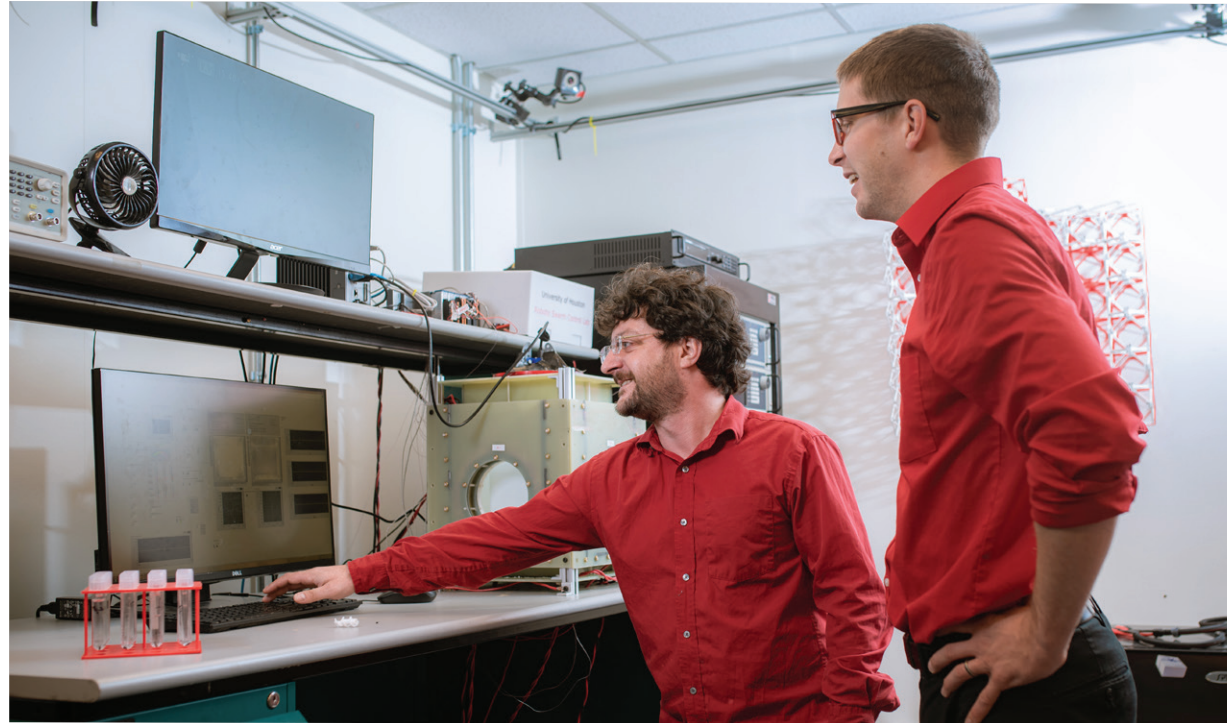


UH Engineer Zhu Han **ELECTED AS AAAS FELLOW**

An engineering professor from the University of Houston has been elected to the American Association for the Advancement of Science, joining a select group of researchers recognized by their peers as among the best in their fields. **Zhu Han**, John and Rebecca Moores Professor of electrical and computer engineering in the UH Cullen College of Engineering, is an expert in game theory, wireless networking and communications and big data. AAAS is the world's largest general scientific society, and each year it elects members whose "efforts on behalf of the advancement of science or its applications are scientifically or socially distinguished." Han was elected to the AAAS section on information, computing and communication for "distinguished contributions to the field of game theory, particularly by modeling analysis and algorithm design of new applications in communication networks."



RESEARCH MILESTONES



Houston Researchers Work to Create Swarms of Tiny Robots to **ATTACK & REMOVE BLOOD CLOTS**

The National Science Foundation recently awarded a three-year \$752,871 grant for a project titled “CPS: Medium: Collaborative Research: Wireless magnetic millibot blood clot removal and navigation in 3D-printed patient-specific phantoms using Echocardiography.” **Aaron Becker**, assistant professor of electrical and computer engineering at the UH Cullen College of Engineering, is the principal investigator (PI) and the UH share of the funding is \$515,059. The project introduces a novel non-invasive method of clot removal. The idea involves using a magnetic field to wirelessly steer tiny (6 millimeters long with a diameter of 2.5 mm), corkscrew-shaped robots through large arteries to break up blood clots in patients.

INNOVATIVE RESEARCH

UH Engineer's Research on Adaptive Machine Learning **WINS NSF AWARD**

The National Academy of Inventors (NAI) has named 32 academic inventors to the February 2020 class of NAI Senior Members. Among these are three UH Engineering faculty members: **Yuhua Chen**, associate professor of electrical and computer engineering, **Hung “Harry” Le**, instructional assistant professor of electrical and computer engineering, and **Yan Yao**, associate professor of electrical and computer engineering. Their research topics range from better batteries to improving online security. Chen develops tools for improving online security and for building a faster, more robust and reliable internet that could allow for the spread of telemedicine and telesurgery. She has eight issued patents. Le is recognized for his work in computer design, embedded systems, ASIC, FPGA and has 21 issued patents. Yao is leading the charge to improve the performance and safety of aqueous and solid-state batteries. He has 10 issued patents in the field of materials for energy conversion and storage.

RESEARCH MILESTONES



The University of Houston

Cullen College of Engineering

The University of Houston Cullen College of Engineering addresses key challenges in energy, healthcare, infrastructure and the environment by conducting cutting-edge research and graduating hundreds of world-class engineers each year. With research expenditures topping \$34 million and increasing each year, we continue to follow our tradition of excellence in spearheading research that has a real, direct impact in the Houston region and beyond.



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