

Shuaimin Liu

ASSOCIATE

Patents and
Innovations
New York

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FOCUS AREAS

Artificial Intelligence and
Machine Learning
Clean Energy
Climate and Clean
Technologies
Communications and
Networking
Data Storage and Cloud
Digital Media and
Entertainment
Intellectual Property
Life Sciences
Mobile Devices
Mobility
NewSpace
Patents and Innovations
Semiconductors
Software

EXPERIENCE

Shuaimin Liu is an associate who has been granted limited recognition to practice in patent matters before the U.S. Patent and Trademark Office under 37 CFR § 11.9(b). She is located in the New York office of Wilson Sonsini Goodrich & Rosati, where she is a member of the firm's patents and innovations practice. She has particular experience preparing and prosecuting patent applications relating to computer architecture, robotics, machine learning, computer vision, autonomous vehicles, network devices, and related technologies.

During her doctoral studies, Shuaimin developed algorithms for image processing and pattern recognition. While attending graduate school, she designed and created a novel interventional robotic device for minimally invasive surgery.

A native of Beijing, China, Shuaimin is fluent in English and Mandarin.

CREDENTIALS

Education

- J.D., Fordham University School of Law
Cum Laude
- Ph.D., Mechanical Engineering, Columbia University
- M.S., Mechanical Engineering, Columbia University
Specialization in Robotics
- B.Eng., Precision Instrument and Mechanology, Tsinghua University, Beijing
Minor in Sensors and Optical Systems

Admissions

- State Bar of New York
- U.S. Patent and Trademark Office (Limited recognition to practice under 37 CFR § 11.9(b))

INSIGHTS

Select Publications

- Co-author, "EGFR and HER2 Activate Rigidity Sensing Only on Rigid Matrices," *Nature Materials*, 2017
- Co-author with H. Wolfenson, G. Meacci, M.R. Stachowiak, T. Iskratsch, S. Ghassemi, P. Roca-Cusachs, B. O'Shaughnessy, J. Hone, and M.P. Sheetz, "Tropomyosin controls sarcomere-like contractions for rigidity sensing and suppressing growth on soft matrices," *Nature Cell Biology*, 2015
- Co-author with T. Iskratsch, C.H. Yu, A. Mathur, V. Stévenin, J. Dwyer, J. Hone, E. Ehler, and M. Sheetz, "FHOD1 is needed for directed forces and adhesion maturation during cell spreading and migration," *27(5) Developmental Cell* 545-59, 2013

- Co-author with S. Ghassemi, G. Meacci, A. Gondarenko, A. Mathur, P. Roca-Cusachs, M.P. Sheetz, and J.Hone, "Cells test substrate rigidity by local contractions on sub-micrometer pillars," 109(14) *Proceedings of the National Academy of Sciences* 5328-33, 2012

TECHNICAL FLUENCY

Artificial Intelligence & Computer Science

- Artificial intelligence, machine learning, and deep learning
- Robotics and autonomous systems, including surgical and industrial robotics
- Computer architecture, computer vision, database systems, operating systems, and cloud computing
- Autonomous vehicle technologies, including perception, planning, and control
- Lidar, radar, sensor fusion, and advanced perception systems
- Natural language processing, generative AI, and foundation models
- Cybersecurity, cryptography, and secure computing architectures

Engineering & Advanced Technologies

- Photonics, optoelectronics, and optical communication systems
- Microfluidics, nanotechnology, photolithography, and SEM/TEM fabrication
- Advanced materials, metamaterials, and nanoscale devices
- Edge computing, IoT systems, and embedded hardware
- Energy systems, battery technologies, and power electronics
- Mechanical and electrical engineering
- Embedded systems, signal processing, and hardware–software integration

Diagnostics & Medical Technologies

- Robotic-assisted surgical systems and medical robotics
- Medical imaging enhanced by deep learning
- Brain–computer interface technologies
- Biomedical and diagnostic devices
- Biosensors and wearable analyte sensors
- Telemedicine platforms and connected medical technologies

Miscellaneous

- Design patent