Yu Ma

mayu@shanghaitech.edu.cn
http://my8693.github.io

Education

Ph.D. Computer science, Shanghai Tech University — Since 2016

B.S. Microelectronics, Finance (Minor) Qingdao University — 2012 – 2016

Experience

Doctoral Candidate, Shanghai Tech University — Since 2016

Supervised by Pingqiang Zhou on artificial intelligence chip

- Analyze soft error for resistance RAM (RRAM) and aging for Dynamic RAM (DRAM).
- Develop efficient techniques for training the memristor-based spiking neural networks targeting better speed, energy and drift lifetime.
- Develop high reliable computing methods for memristor crossbar based neural network computing.
- Develop ASIC for neural network based light field rendering.

Research Intern, Qingdao University — 2013 – 2015

Supervised by Shandong Li on magnetics

- Prepare amorphous films by pulse laser deposition.
- Set up a biochip testing framework based on giant magnetoresistance (GMR) effect with LabVIEW.

Course-Projects

Convex optimization, Studying pension investment with convex optimization — 2017

Fintech, Stock price prediction with recursive neural network (RNN) — 2019

Services

Teaching Assistant, Electronic circuit and system — 2016

Vice-chair, Society for mathematical modeling, Society for voluntary — 2015

Volunteer, Clipper Race — 2014

Awards

The First Runner-up Team, Seizing Opportunities in Fintech (Fintech Workshop) — 2019

Meritorious Winner, COMAP's Mathematical Contest in Modeling (MCM) — 2015

The Third Price, Challenge Cup — 2015

Competences

Languages Chinese (*native*), English (*limited working proficiency*)

Techniques Python, C/C++, Matlab, git, LaTeX, MySQL, NoSQL, LabVIEW

Publications

[1] **Y. Ma** and P. Zhou, "Efficient Techniques for Training the Memristor-based Spiking Neural Networks Targeting Better Speed, Energy and Lifetime," *Proceedings of the Asia and South Pacific Design Automation Conference*, 2021.

[2] **Y. Ma**, D. Jia, W. Gao and P. Zhou, "Addressing Aging Issues in Heterogeneous Three-Dimensional Integrated Circuits," *Proceedings of the IEEE International Conference on ASIC*, 2019. (Invited)

[3] **Y. Ma**, L. Zheng and P. Zhou, "CoDRAM: A Novel Near Memory Computing Framework with Computational DRAM," *Proceedings of the IEEE International Conference on ASIC*, 2019.

[4] **Y. Ma**, D. Jia, H. Zhang, R. Wang and P. Zhou, "A Compact Memory Structure based on 2T1R against Single-Event Upset in RRAM Arrays," *Proceedings of the IEEE International Conference on ASIC*, 2019.

[5] C. Wu, Y. Huang, Y. Cui, Z. Shen, **Y. Ma**, S. Xie, H. Du, X. Gao and S. Li, "Film Thickness Gradient-Induced Magnetic Anisotropy and Ferromagnetic Resonance in Fe56Co24B20 Amorphous Films Prepared by Pulse Laser Deposition," *IEEE Transactions on Magnetics*, 2015.