Skanda Koppula

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ETH Zürich, Fulbright Research Fellowship
Researcher at the Systems Group, Department of Computer Science. *Sept. 2018 - August 2019*

Massachusetts Institute of Technology
Masters of Eng. and BSc, Computer Science, MEng GPA: 5.0/5.0 *Sept. 2013 - June 2018*

Relevant courses: Hardware Architectures for Deep Learning, Applied Cryptography, Compilers, Machine Learning, Operating Systems, Computer Architecture, Computer Security, Bayesian Inference

Work Experience

NVIDIA Autonomous Driving R&D, Intern *May 2018 - September 2018*
- Added support for multi-camera vehicle feeds on NVIDIA's training and simulation pipelines.
- Decreased training time by 16% using custom data format to reduce disk reads and CRC overhead.

Google Acoustic Modeling Research Team, Intern *June 2017 - September 2017*
- Tested kernel factorization to improve cross-domain accuracy of neural language models.
- Developed approach to characterize memory and visualize hidden state of recurrent networks.

Yahoo, Software Engineering Intern *June 2016 - Aug. 2016*
- Improved malicious login attempt event detection by 7% with a pruned neural network.
- Implemented online updating of the login classifier using data from a multi-company threat feed.

Square Security, Software Engineering Intern *June 2015 - Aug. 2015*
- Built an in-production service to collect memory dumps from Square card readers
- Simplified firmware bug-fixing by parsing dumps into a human-readable source error trace.

Projects

MIT Driverless (Formula Student Racecar Team), Perception Lead *August 2016 - Present*
- Demonstrated a 85% mAP/0.8 IoU YOLOv3-based network for racetrack landmark localization.
- Trained and tested a supervised driving network for a Formula Student Electric racecar.
- Ongoing work is using A3C, on the Carla world simulator, to learn transferable driving policies.
- Developed PCBs and firmware for the first open-source automotive battery management system
- Won 2nd place at the 2017 U.S. Formula Student Electric competition (among 53 teams).

Research

MIT Energy Efficient Systems Lab, Master's Thesis *Sept. 2016 - June 2018*
- Achieved a $>$ 2x speed-up and $>$ 500x decrease in estimated energy consumption for real-time speaker identification by demonstrating an FPGA design capable of neural network inferencing and mel-frequency coefficient extraction.

ETH Zürich Systems Lab, Swiss Government Excellence Scholar *Sept. 2018 - June 2019*
- Ongoing work to demonstrate faster CNN inference using aggressive DRAM timing parameters and CNNs retrained for bit-error resilience.

Biomedical Cybernetics Lab, Student Researcher *May 2013*
- Applied Bayesian modeling to develop a genomic-environmental prognostic models to identify patients at-risk or pre-disposed to alcoholism, schizophrenia, and lung cancer.

Skills

Embedded Systems: **C/C++**, **x86 Assembly**.
Hardware and Digital Design: **Altium PCB Designer**, **Vivado HLS**, and **Bluespec Verilog**.
Miscellaneous: **Python** (**TensorFlow, PyTorch, numpy**), **Java**, **Scala**, **bash**.

Research publication list and references are available upon request!