Zhenruo (Flora) Xue

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EDUCATION

University of California, Berkeley   **Aug 2015 - May 2020**

Master of Science, Electrical Engineering & Computer Science | Bachelor of Arts, Computer Science

- Major GPA: 3.84; Upsilon Pi Epsilon (Computer Science Honor Society) Member
- Related coursework: (Graduate) Deep Reinforcement Learning, (Graduate) Deep Neural Networks, Robotics, ML, AI, OS

TECHNICAL SKILLS

Languages: Python, Java, C, Objective C, SQL, JavaScript, CSS, HTML, Bash, LaTeX
Tools: PyTorch, Tensorflow, DL4J, Robot Operating System, Django, PostgreSQL, React, Docker, Vagrant, Anaconda, Git
Hardware: Baxter, Sawyer, Kuka, Arduino, TI Launchpad

RESEARCH EXPERIENCE

Berkeley ADEPT Lab, Berkeley, CA   **March 2019 – Present**

Research Assistant, advised by Prof. Kurt Keutzer

- Researched on **Adaptive Text-to-Speech (TTS) On-Device**, which aimed for high-quality TTS in the user's own voice based on a few seconds of samples, while keeping the model and user's data completely on device
- Researched on and implemented a novel solution with reversible networks for **training** deep convolutional neural networks **on edge devices** with limited memory, computing power and training data (e.g. a mobile phone)
- Achieved around **50%** memory usage reduction and at least **3** times larger network size compared to naïve implementation
- Incorporated **speaker embedding** into a state-of-the-art vocoder (WaveGlow) via hyperconvolution for **few-shot adaptation**, and **squeezed the FLOPs** of the model to train on device

Berkeley Deep Drive, Berkeley, CA   **Jan 2018 – May 2019**

Research Assistant, advised by Prof. Trevor Darrell

- Designed and engineered an **efficient human-in-the-loop pipeline** to label **billions** of images (30 million per category and 300+ categories): sample tiny batches of images for human labeling, and machines learn from them to label the rest; leveraged different means of **parallelization** on multiple GPUs (with bash) and even machines (with Ray)
- Worked on an original algorithm to teach an agent how to sample batches of representative images by combining the idea in **deep reinforcement learning** with **active learning**; the agent can learn a policy which is **transferable** to other tasks

INDUSTRY EXPERIENCE

LinkedIn, Sunnyvale, CA   **May 2018 – Aug 2018**

Software Engineer Intern

- Worked on the **iOS Infrastructure** team on redefining an efficient and unified architecture, *Saaz*, for the LinkedIn app
- Quickly learned iOS development, Objective C and the LinkedIn's iOS build stack in **two** weeks
- Designed and implemented a **new feature in the infrastructure** to send messages across screens
- Built a sample App to ramp up engineers in the company's **whole iOS community** about using Saaz to efficiently fetch and page data from the backend, and write reusable code to render a large collection of data on the UI
- **Led a fellow intern** on leveraging Saaz to implement a new screen with dynamic data for Premium team

Amazon Lab126, Sunnyvale, CA   **May 2017 – Aug 2017**

Software Engineer Intern

- Designed and implemented the **test automation framework** for Fire OS Connectivity team
- Built upon and complemented APIs in the KATSPyTest framework for the **whole Amazon Devices team**
- Defined hardware automation setup: used **Arduino** to control Fire TV remotes, and LED sensor to measure latency
- Deployed into **CI pipeline** as the first suite of connectivity automated tests

PROJECT EXPERIENCE

Text Thresher, Berkeley Institute of Data Science   **Feb 2016 – Dec 2017**

Full Stack Developer

- Built a crowdsourcing platform with Django, React and Docker for annotating large NLP corpus

Berkeleytime.com, Associated Students of University of California (Office of the CTO)   **Sep 2016 – May 2017**

Backend Developer

- Developed the algorithm for a "course scheduler" on Berkeley's course catalog website (**29,000+** users) and also engineered the backend with **Django** and an **MVC structure**