Berthy T. Feng

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Education

Princeton University **Princeton, NJ, Class of 2019**

- BSE Candidate in Computer Science, Tau Beta Pi, GPA: 3.86 / 4.0
- Selected Courses: *Computer Vision, Advanced Topics in CS: Visual Recognition, Algorithms and Data Structures, Programming Systems, Reasoning about Computation, Advanced Programming Techniques, Machine Learning*

Laurel School **Shaker Heights, OH, Class of 2015**

- Lyman Prize (Valedictorian), Phi Beta Kappa Award, National Merit Finalist, Ohio State Champion in U.S. Extemporaneous Speaking, Quarterfinalist at National Speech & Debate Tournament

Technical Skills

Programming Languages:	Java, Python, C, C++, Objective-C++, Swift
Deep Learning Frameworks:	TensorFlow, PyTorch, Caffe
Additional Tools:	Django, Git, Max/MSP, R, Stata

Work Experience

Google, Software Engineering Intern **Los Angeles, CA, Summer 2018**

- Developed back-end infrastructure and machine learning models on Machine Intelligence team of Google Photos.
- Expanded data pipeline to add new source of training data for ML models related to people clustering.

Princeton Electrical Engineering, Research Assistant (Article) **Princeton, NJ, Summer 2017**

- Created Pixplor, an "intelligent photo album" iPad app for nursing-home residents with dementia. Pixplor learns user preferences to recommend photos from a database of 5+ million images.
- Developed computer vision and machine learning components, including emotion estimation, gaze tracking, and recommendation algorithm.
- Wrote server-side code to process client requests using Django REST framework and client-side code in Swift and Objective-C++.

U.S. Senate Banking Committee, Policy Intern **Washington, DC, Summer 2016**

- Collaborated with national security policy team of Senator Sherrod Brown's staff on U.S. Senate Committee on Banking, Housing, and Urban Affairs.
- Researched and drafted reports on money laundering and human trafficking.

Research Experience

Bandwidth Expansion Using Perceptually-Motivated Loss (Paper) **Fall 2019**

- Proposed deep learning model for extreme speech bandwidth expansion (8khz to 44.1kHz) using variant of FFTNet trained with perceptual loss.
- Collaborated with Prof. Adam Finkelstein (Princeton), Jiaqi Su (Princeton), and Zeyu Jin (Adobe Research).

Hierarchical Recurrent Neural Networks for Audio Super-Resolution (Paper) **Spring 2018**

- Proposed and tested hierarchical RNN architecture for audio super-resolution. Also proposed improvements to baseline model, including perceptual losses and a generative adversarial network.
- Won Princeton CS Department's Best Poster Award.

Analysis of Word Encodings for Visual Question Answering (Paper) **May 2018**

- Compared two methods (bag-of-words and word2vec) of encoding text for visual question answering (VQA).
- Proposed novel metrics and methods for analyzing the "knowledge" of a VQA classifier model, including semantic precision and class activation mapping.

Leadership and Activities

Princeton CS Department, Lab TA & Undergraduate Grader **Fall 2017 – present**

- Assist Prof. Adam Finkelstein with independent work seminar: "Deep Learning for Audio Synthesis."
- Help students from introductory CS courses understand assignments and important concepts.

HackPrinceton, Marketing Director (Organizer pre-2017) **Fall 2016 – Spring 2018**

- Led Marketing team to promote semiannual, 500+ student hackathon to students, sponsors, and mentors.

Music Production (SoundCloud)

- Produce electronic music using a mix of audio recording, analog synthesis, and digital synthesis.