

Berthy T. Feng

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EDUCATION

California Institute of Technology

Pasadena, CA

- PhD candidate in Computing & Mathematical Sciences

Princeton University

Princeton, NJ, Class of 2019

- BSE in Computer Science, *Summa Cum Laude*
- Certificate in Statistics & Machine Learning

PUBLICATIONS

Visual Vibration Tomography:

Estimating Interior Material Properties from Monocular Video ([PDF](#))

CVPR 2022 (Oral)

Berthy T. Feng, Alexander C. Ogren, Chiara Daraio, Katherine L. Bouman

- Formulate a physics-informed approach for recovering 3D, spatially-varying material properties of an object from monocular video.
- Demonstrate our approach on simulated and real videos of drum heads and cubes.

Towards Unique and Informative Captioning of Images ([PDF](#))

ECCV 2020

Zeyu Wang, Berthy T. Feng, Karthik Narasimhan, Olga Russakovsky

- Propose SPICE-U, an image-captioning metric that rewards diverse and descriptive captions and is better correlated with human judgment.
- Demonstrate a technique to improve any captioning model by using mutual information as a re-ranking objective.

Bandwidth Expansion Using Perceptually-Motivated Loss ([PDF](#))

ICASSP 2019

Berthy T. Feng, Zeyu Jin, Jiaqi Su, Adam Finkelstein

- Propose a deep-learning model for extreme speech bandwidth expansion (8 kHz to 44.1 kHz), using a variant of FFTNet trained with perceptual loss.
- Show that our perceptual objective leads to better human judgment scores for perceptual quality.

WORK EXPERIENCE

Google, Software Engineering Intern

Mountain View, CA, Summer 2019

Play Search ML

- Integrated BERT model in Play Apps Search pipeline and evaluated the model as a ranking signal.

Google, Software Engineering Intern

Los Angeles, CA, Summer 2018

Photos Machine Intelligence

- 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.

TEACHING EXPERIENCE

Volunteer Tutor	Caltech Y	2019
Lab TA	Princeton CSML, SML 201: Intro to Data Science	2019
Teaching Assistant	Princeton CS, IW06: Deep Learning for Audio Synthesis	2018
Lab TA & Grader	Princeton CS, Introductory CS Courses	2018
Tutor	Princeton McGraw Center for Teaching & Learning, ECO 100/101	2017 – 2018

TECHNICAL SKILLS

Programming Languages: Python, MATLAB, Java, C++, C
Deep Learning Frameworks: TensorFlow, PyTorch, Caffe

AWARDS & HONORS

NSF Graduate Research Fellowship 2020
Kortschak Scholars Graduate Fellowship 2019