Enmao Diao

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Durham, NC, US

Passionate, Ambitious, Honest, Curious, Interested
Artificial Intelligence (AI), Machine Learning (ML), Distributed Learning System
Strives to learn and apply best practices in AI projects, develop team and company

Education

- **Duke University** | *Ph.D. candidate Electrical Engineering* May 2018 – Present
- **Harvard University** | *M.S. Electrical Engineering* Aug 2016 – May 2018
- **Georgia Institute of Technology** | *B.S. Computer Science* Aug 2013 – May 2016
- **Georgia Institute of Technology** | *B.S. Electrical Engineering* Aug 2012 – May 2016

Publications

- **HeteroFL: Computation and communication efficient federated learning for heterogeneous clients**: **Enmao Diao**, Jie Ding, and Vahid Tarokh (ICLR 2021)
- **On Statistical Efficiency in Learning**: Jie Ding, **Enmao Diao**, and Vahid Tarokh (IEEE Transactions on Information Theory)
- **DRASIC: Distributed Recurrent Autoencoder for Scalable Image Compression**: **Enmao Diao**, Jie Ding, and Vahid Tarokh (DCC 2020)
- **Speech emotion recognition with dual-sequence LSTM architecture**: J Wang, M Xue, R Culhane, **E Diao**, Ding J, Vahid T (ICASSP 2020)
- **Restricted recurrent neural networks**: **Enmao Diao**, Jie Ding, and Vahid Tarokh (IEEE BigData 2019)
- **A Penalized Method for the Predictive Limit of Learning**: Jie Ding, **Enmao Diao**, and Vahid Tarokh (ICASSP 2018)

Experience

- **Research Assistant**
  Duke Unversity May 2018 – Present
  - Study and develop distributed learning algorithms regarding efficiency and privacy of data and models from an artificial intelligence perspective, advised by Prof. Jie Ding and Prof. Vahid Tarokh

  Harvard University Aug 2016 – May 2018
  - Study limit of learning from a statistical learning perspective of Takeuchi's information criterion, advised by Prof. Jie Ding and Prof. Vahid Tarokh

  Georgia Institute of Technology May 2014 – May 2016
  - Implement melody extraction algorithm for monophonic pitch transcription mobile application, advised by Prof. Elliot Moore II
  - Implement Cellular Neural Network (CNN) on FPGA with Verilog, advised by Prof. Hyesoon Kim
- **Project Manager**
  Duke Data+ May 2019 – Aug 2019
  - Lead a full-time ten-week undergraduate summer research project that develops algorithms for speech emotion recognition and emotional speech generation
- **Teaching Assistant**
  Duke Unversity Aug 2019 – May 2020
  - Assist students in learning and implementing deep learning and audio signal processing algorithms

  Georgia Institute of Technology May 2015 – Aug 2015
  - Assist students in learning FPGA, oscilloscope and implementing a processor with VHDL

Projects

- **SemiFL: Communication Efficient Semi-Supervised Federated Learning with Unlabeled Clients**: A new Federated Learning framework to address Semi-Supervised Federated Learning (SSFL). (*submitted to NeurIPS 2021)*
- **Gradient Assisted Learning**: A new method for various entities to assist each other in supervised learning tasks without sharing data, models, and objective functions. (*submitted to NeurIPS 2021)*
- **Dimension Reduced Turbulent Flow Data From Deep Vector Quantizers**: Compressing 3D turbulent flow data (naiver-stokes) with Vector Quantized Autoencoder (*submitted to Physical Review Fluids)*

Award

- **Student Travel Award** | IEEE BigData 2019 Dec 2019
- **ECE Senior Scholar Award** | Georgia Institute of Technology Apr 2016
- **President Undergraduate Research Award** | Georgia Institute of Technology Jun 2015

Skills

- **Programming**: Python (Pytorch), Matlab, R, LaTeX, SQL, Java