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 and Computer Engineering* — May 2018 – Present
- **Harvard University** | *M.S. Electrical and Computer Engineering* — Aug 2016 – May 2018
- **Georgia Institute of Technology** | *B.S. Computer Science* — Aug 2013 – May 2016
- **Georgia Institute of Technology** | *B.S. Electrical and Computer 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 a 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 learning and implementing deep learning and audio signal processing algorithms

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

Projects

- **Assisted Learning**: A new methodology, Gradient Assisted Learning (GAL), for various entities to assist each other in supervised learning tasks without sharing data and models (*submitted to ICML 2021)*
- **Continual Data Generation**: Continual data generation with multimodal controller in the context of lifelong learning (*prepared for ICCV 2021)*
- **Modeling 3D Turbulent Flow**: Compressing 3D turbulent flow data (naive-stokes) with Vector Quantized Autoencoder (*prepared for 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