Haotian An

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EDUCATION

Johns Hopkins University — **Baltimore, MD**
Master of Science in Computer and Information Security (3.96 / 4.00) — *08/2019 – 12/2020 (Expected)*

Tsinghua University — **Beijing, China**
Bachelor of Engineering in Electronic Engineering — *08/2015 – 07/2019*
- *Exchange Program: The University of Hong Kong*

SKILLS

- **Programming:** Python, Java, C/C++, Shell, MATLAB, HTML, SQL
- **Tools:** Tensorflow, PyTorch, SpringBoot, React, MySQL, Git, Node.js, AWS, Google Cloud, LaTeX

EXPERIENCE

Software Development Intern — **Amazon Web Services, Inc.**
EC2 VPC Anomaly Detection — *05/2020 - present*
- Project focused on integrating machine learning algorithms into EC2 VPC data plane metrics anomaly detection.
- Technologies used including AWS SageMaker, S3, Elastic Block Store and CloudWatch.

Machine Learning and Software Engineering Intern — **Tencent, Beijing**
CTR Prediction System based on DeepFM — *06/2019 – 08/2019*
- Implemented Tencent news video **CTR prediction** system using customized **DeepFM** and **Wide&Deep** model.
- Performed feature engineering on Tencent news **15 million** datasets, extracted BERT feature from title and ResNet feature from cover image.
- Proposed self-designed loss function, increased performance as reducing l2-error by **47%** compared to previously used model.
- The proposed framework has been **put into production** for aiding video recommendation system.

Deep Learning Research Intern — **University of California, Los Angeles, CA**
Deep Learning Based Medical Image Processing and Augmentation — *07/2018 – 09/2018*
- Innovatively implemented progressively growing strategy in training **GAN**s, augmented 1024_2 resolution datasets.
- Trained multiple-input CNN aimed in merging coil images on 50GB dataset, **increased** PSNR by **21%** than previous work conducted in group.
- Implemented Bidirectional-ConvLSTM model to utilize temporal information, suppressed motion aliasing effectively.
- Formed results into conference abstract in *ISMRM 2019*.

Research Intern — **Tsinghua University, Beijing**
GAN Based Fast Compressed Sensing MRI Reconstruction — *09/2018 – 07/2019*
- Implemented GAN based learning approach with **Tensorflow** to reconstruct MR images.
- Proposed to incorporate adversarial and frequency domain loss together with l2 loss, outperformed **state-of-art** algorithms in both PSNR and SSIM.
- Contributed to a ***first-authored paper***, accepted as presentation in *ICIG 2019*.

PROJECTS

"Dinning Daddy" Mobile App Developmet — **Johns Hopkins University | 04/2020**
- Developed mobile app using React Native in Expo as front end, and Spring Boot as backend, featuring security check in user login and user profiles.

Web App Development **(Go Arborist: 2019 Fall Hophacks Winner)** — **Johns Hopkins University | 09/2019**
- Incorporated Vision and Geolocation API in web app build with Node.js, Firebase and Bootstrap.

Audio-Visual Cross Modal Matching: NLP, PyTorch — **Tsinghua University | 09/2017**
- Extracted visual and audio features in VGG and inception-v3 model, implemented LSTM architecture to match video and visual features.

PUBLICATIONS

- **Haotian An**, Zhang Y-J. "A Structural Oriented Training Method for GAN Based Fast Compressed Sensing MRI". Proceedings of the 10th International Conference on Image and Graphics (LNCS 10667), 109-118, 2019.
- Vahid K Ghodrati, **Haotian An**, Zihao Xiong, Jiaxin Shao, Mark Bydder, and Peng Hu, 'A Generative Adversarial Network with a Progressively Growing Training Strategy for MRI Dataset Augmentation', in *ISMRM 2019*.
- Wentian Li, Xidong Feng, **Haotian An**, Sam Ng, Yu-Jin Zhang, 'MRI Reconstruction with Interpretable Pixel-Wise Operations using Reinforcement Learning', in *AAAI 2020*.