

Chenhao WU (Vito)

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2001 Longxiang Road, Shenzhen, Guangdong, China, 518172

EDUCATION

The Chinese University of Hong Kong, Shenzhen

Bachelor of Engineering, Major in Computer Science and Engineering, Minor in Philosophy

Guangdong, China

Expected May 2021

Relevant Coursework: Information Theory, Coding Theory, Data Compression, Fundamentals of Communication, Software

Development, Computer Networking, Computer Architecture, Applications on IoT

SKILLS

- **Programming Languages:** C/C++, LLVM, Assembly, Python, Swift, Julia, LaTeX, HTML, CSS, JavaScript
- **Computer Related:** Raspberry PI, Arduino, Zigbee, Linux(kernel level), iOS Software, WeChat Mini-program, Compiler Design, Valgrind, Qt/GTK-based GUI Application, Git
- **Interpersonal Skills:** Public Speaking, Teamwork

LANGUAGES

- **Mandarin:** native speaker
- **English:** professional and academical communications

EXPERIENCE

Shenzhen Key Laboratory of IoT Intelligent System and Wireless Network Technology

Guangdong, China

Undergraduate Research Assistant

Sep 2018 - Present

- **Smart Lamp-post:** Designed and trained a shallow CNN to classify rotated images. Achieved F1-score of 0.99 on test set of 1M+ images
- **BATS Protocol:** A computer vision model to classify views of automobile images
 - * Implement the routing table of BATS protocol
 - * Design and implement the dynamic address assignment algorithms of BATS protocol
 - * Reduced model complexity and size by 40% by freezing model and performing post-training quantization
- **Multi-hop Video Streaming:** A computer vision model to determine if image is total loss or repairable
 - * Trained ensemble of CNN architectures on 1M+ automobile images to classify vehicles as total loss or repairable resulting in 25% higher weighted F1-score and 60% decrease in model size compared to older iteration
 - * Incorporated first notice of loss information using NLP to increase F1-score by 10%

CUHK(SZ) Network Coding Lab

Guangdong, China

Undergraduate Research Intern

May 2018 - Aug 2018

- **Optimal Node Search:** Implemented Dijkstra's algorithm on 10K+ network nodes to find shortest path for signal propagation resulting in 25% reduction in costs

Fujian Daily Group

Fujian, China

Summer Intern

Jan 2017 - Aug 2017

- **Squeek Twitter iOS:** Designed and developed Twitter client using Fabric SDK

PROJECTS

- **OCR using Conditional Random Fields:** A probabilistic graphical model for sequential character recognition
 - Implemented a CRF in $O(m|\mathcal{Y}|^2)$ time to achieve a 84% letter-wise accuracy on UPenn OCR dataset
 - Implemented OpenMPI CRF using PETSc and Tao to achieve 77.1% letter-wise accuracy
- **ARYouThereYet:** An augmented reality application developed on ARKit with dynamic AR nodes
- **Aspect-based Sentiment Analysis:** Implemented Deep Memory Networks to achieve 78.66% accuracy, 0.69 F1-score on SemEval 2014 dataset
- **Iris Speech to Code:** A natural speech to code converter for aiding programmers with disabilities
 - Trained an intent classification model in Microsoft Luis to classify 15+ classes or commands
 - Implemented a message passing protocol using RabbitMQ to broker messages between Google API, ElectronJS, and VS Code
- **AI Lifeguard:** Trained a 3D-CNN model on Microsoft Azure for action localization on drowning people in swimming pools. Achieved mean IOU score of 0.45

ADDITIONAL EXPERIENCE & ACHIEVEMENTS

- Presented a multi-hop video streaming demo on *Practical Inner Codes for BATS Codes in Multi-hop Wireless Networks* at **ACM WUWNet 2018**
- Won **Undergraduate Research Award** in The Chinese University of Hong Kong, Shenzhen