Jonathan Wang

Information and Software Engineer · Data Scientist · University of Cambridge

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Education

University of Cambridge
Cambridge, United Kingdom

M.ENG (Hons), Engineering, 4th Year Student
Oct. 2018 - Jun. 2022

- First Year: **High 2.i (74%)** ; Second Year: Ungraded (As a result of CoVid-19) ; Third Year: **High 2.i (71%)**.
- Specialised in **Information and Computer Engineering and Bioengineering**.
- **Notable Papers**: Signal Processing, Inference, Deep Learning, Computer Vision, Information Theory, Software Engineering
- **Masters Project**: Project involved using natural language processing and machine learning to train a counter speech dialogue system that can respond intuitively to hate speech. Introduced a custom unsupervised evaluation metric using neural networks with associated custom data sets. Fine-tuning of state-of-the-art dialogue systems such as Blender Bot was done to create a convincing dialogue system.

Westlake Boys High School
Auckland, New Zealand

High School
Feb. 2013 - Dec. 2017

- **A Levels**: Mathematics (A*), Physics (A*), Chemistry (A*), Biology (A*), English Literature (A*)
- **NZQA Scholarships**: Outstanding Scholarships in Chemistry and Statistics, Scholarships in Physics, Calculus, Earth and Space Science, Biology and English

Skills

DevOps	AWS, Docker, Kubernetes, Terraform, CircleCI, Snowflake
Front-end	HTML5, CSS, React.js, JavaScript, TypeScript
Programming	Python, C++, RESTful API, LaTeX, Unix, Git
Languages	English(Fluent), Shanghainese(Fluent), Mandarin(Professional), French(Beginner)

Experience

HomeX
Cambridge, United Kingdom

Applied Data Science Intern
Jun. 2021 - Sep. 2021

- Built a backend API using Python FastAPI and data modelling/machine learning techniques to generate models of statistics about home ownership by geographical location. API was integrated into many existing distributed systems to be used throughout the organisation.
- Built a front-end website using TypeScript and React to develop an interactive website to intuitively demonstrate different statistics using interactive street maps and tables.
- Deployed all these services from scratch using a pipeline involving Docker, Kubernetes and Terraform to generate infrastructure allowing data ingestion from AWS S3 and Snowflake and data serving via Kubernetes pods to a dedicated domain. CircleCI to allow for CI/CD.
- Authentication of internal services using JavaScript web tokens and Keycloak realms.

Extracurricular Activity and Projects

Cambridge University Robotics Society
Cambridge, United Kingdom

Core Member
Nov. 2018 - Jun. 2021

- Designed an optimisation strategy using image pre-processing to increase computational efficiency that reduced computation times by over 100%. This was for a robotic football tournament.
- Collaborated on a behavioural system that optimized the path planning system when the robot is moving into positions. This was computed using trajectory planning and Bezier curves in C++.
- Developed an audio transmission system for the robot rescue major which integrated front-end JavaScript with ROS audio to create a web-based system that could send and receive audio.

Machine Learning Self Project
2020

- Built a fully convolutional neural network for image segmentation in PyTorch with Python, network could achieve 80%+ accuracy on minimal training data. Code could segment the image into man made buildings and natural landscapes.

Honors & Awards

2021	**College Prize for Engineering**, Robinson College	*Cambridge, UK*
2019&20	**College Exhibition Awards for Academic Achievement**, Robinson College	*Cambridge, UK*
2017	**Proxime Accessit**, Westlake Boys High School	*Auckland, NZ*
2017	**New Zealand Outstanding Scholars (1 of 50)**, NZQA	*Auckland, NZ*
2016	**NZ International Chemistry and Biology Olympiad Training Camps**, Chemistry and Biology Olympiads	*Auckland, NZ*