

MICHAEL CHEN

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EDUCATION

Raffles Institution

A prestigious high school in Singapore with an A-Level curriculum

Singapore

Jan 2017 - Dec 2022

SKILLS

Artificial Intelligence: Natural Language Processing (NLP), Transformers, PyTorch, Neurosymbolic AI
Web Development: Frontend (Javascript & ReactJS), Backend (Python & Django), AWS, Git
Entrepreneurship: Design Thinking, Fund-raising, Sales & Marketing, Project Management

PUBLICATIONS

M. K. Chen, X. Zhang and D. Tao. [JustLogic: A benchmark for natural language deductive reasoning](#)
Under review at ICLR 2025

M. K. Chen, S. Zhao, C. Borcea and Y. Chen. A Field Study on the Impact of The Counter Ad-Blocking Wall Strategy on User Engagement. *Under review at Decision Support Systems*

S. Zhao, **M. K. Chen**, C. Borcea, Y. Chen. [Personalized Dynamic Counter Ad-Blocking Using Deep Learning](#). *IEEE Transactions on Knowledge and Data Engineering 35.8 (2022): 8358-8371*.

RESEARCH EXPERIENCE

Nanyang Technological University

AI Research Volunteer

<https://www.ntu.edu.sg/>

Aug 2024 - Present

- Collaborating with Prof. Tao Dacheng's research group with a focus on logical reasoning in LLMs
- First author of a paper on accurately measuring the deductive reasoning capabilities of LLMs. Developed a synthetic dataset with greater linguistic diversity and reasoning complexity than existing datasets. Under review at ICLR.
- Currently working on improving logical reasoning in LLMs by (i) fine-tuning LLMs on novel chain-of-thought reasoning datasets and (ii) developing neurosymbolic AI systems.

Stanford University

AI Research Volunteer

<https://cs.stanford.edu/~ermon/website>

Aug 2024 - Present

- Collaborating with Dr. Felix Petersen from Ermon Group with a focus on developing small yet powerful neural networks for edge computing
- Conducted experiments to improve neural networks based on differentiable logic gates. Explored various formulations of real-valued logics and their effectiveness in neural networks.
- Currently working on creating a modified Adam optimizer that is specifically tailored toward neural networks using real-valued logic

New Jersey Institute of Technology (NJIT)

Business Data Science Research Intern

<https://www.njit.edu>

Nov 2020 - Dec 2023

- Conducted research on ad-blocking under an NJIT research group led by Prof. Christian Borcea and Prof. Yi Chen, with the support of Forbes Media
- Helped implement a novel deep learning model as a counter ad-blocking strategy for publishers. Studied the impact of the strategy on user engagement using a Forbes dataset containing 40K unique ad-blocking users. Published at IEEE TKDE.
- First author of a paper that compares the impact of two common counter ad-blocking strategies on user engagement. Extensive application of statistical analysis and business management theories. Journal paper currently under review.

DATA SCIENCE EXPERIENCE

AI Singapore (National Research Institute)

Machine Learning Engineer Intern

<https://aisingapore.org>

Jun 2020 - Jan 2021

- Implemented Monte Carlo simulations on historical transaction data of restaurants to predict how potential changes to food menu would affect revenue
- Built MenuCarlo, a web app for visualizing restaurants' historical transactions and recommending menu optimizations to enable revenue growth, using React and Django

- Implemented at 3 restaurants, with the support of Temasek Polytechnic

Psion Insights (Enterprise AI Startup)

Data Science Intern

Jul 2020 - Jan 2021

- Built classification model with deep learning to categorize existing risks into relevant types, thus saving the time of risk managers by automating their workflow
- Implemented fuzzy matching algorithm to recommend solutions for newly-added company risks, allowing risk management teams to make more accurate decisions
- Demoed to various executives at Fortune 500 companies in risk management teams

ENTREPRENEURSHIP & LEADERSHIP EXPERIENCE

RoadMaple

Co-Founder & Chief Product Officer

<https://roadmaple.com>

Sept 2021 - Present

- An online platform that provides roadmaps, resources and mentorship for youths to learn tech skills
- Gained 2.6k users and 30+ partnering organizations & experts in 6 months
- Awarded a government grant of \$20,000 USD from the National Youth Council

EchoClass

Founder

<https://www.echoclass.com>

May 2021 - Dec 2023

- Built an open-source learning management system (LMS) tailored for quick setup and better student engagement through gamification
- Used by 5+ coding instructors & 100+ students. Led a team of 4 developers
- Received \$5400 USD in corporate sponsorship from Tinkertanker, a prominent code education company in Singapore

CERTIFICATIONS

Mathematics for Machine Learning

Linear algebra, multivariate calculus, and PCA

Imperial College London

Apr 2023

Neuro-Symbolic AI Essentials

Learned to create, infer, and interpret Logical Neural Network (LNN) models

IBM Research

Feb 2023

AWS Certified Cloud Practitioner

Foundational knowledge of AWS cloud services and cloud computing

Amazon Web Services

July 2024

Certified Associate in Project Management (CAPM)

Project management fundamentals, predictive methodologies, agile principles, business analysis

Project Management Institute

July 2024

MILITARY SERVICE

Singapore Armed Forces: Medical Response Force

Combat Medic

Jan 2023 - Nov 2024

- An elite medical force trained to support Singapore's special forces and the general public, including in Chemical, Biological, Radiological, and Explosive (CBRE) environments
- Trained as an Emergency Medical Technician (EMT), capable of providing medical care in an ambulance setting.
- Achieved 2 awards: (1) Outstanding Trainee Award, (2) Best Shot Award
- Volunteered to build and maintain the unit's Telegram bot for tracking our soldiers' training programme, which helped reduce administrative load on commanders

VOLUNTEERING

Code in the Community

Volunteer Code Instructor

<https://codeinthecommunity.com>

Jan 2022 - May 2022

- Provided weekly lessons on basic Python to 2 batches of 13 to 16 year old students
- One of the youngest instructors in the organisation