Jay Zern Ng

https://jayzern.github.io

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Education

- **Columbia University** — New York, NY
  M.S. in Data Science; GPA: 3.67 — *Aug 2019 – Dec 2020*
  - Operating Systems, Cloud Computing & Big Data, Programming Languages & Translators, Computer Networks, Intro to Databases, Applied Deep Learning, Applied Machine Learning
  - Machine Learning with Probabilistic Programming, Exploratory Data Analysis & Visualization, Probability & Statistics, Statistical Inference & Modeling
- **University of Warwick** — Coventry, UK
  B.S. in Data Science; First Class Honors: 80.2% — *Oct 2016 – Jul 2019*
  - Major in Statistics and Computer Science; Minor in Mathematics
- **Tsinghua University** — Beijing, CH
  Deep Learning Summer School — *Jun 2020 – Jul 2020*

Experience

- **Boost** — Kuala Lumpur, MY
  Software Engineer Intern — *May 2020 – Sep 2020*
  - Boost is a lifestyle e-wallet app with 10 million+ users. Built internal web applications and microservices using Angular, RxJS and Node.js. Deployed and monitored CI/CD pipelines using Docker, Kubernetes, Jenkins, AWS.
- **Columbia Law School** — New York, NY
  Research Assistant — *Sep 2019 – Apr 2020*
  - Wrote a data engineering ETL pipeline for 100GB+ of JSON/XML text data into a PostgreSQL database. Developed a tool to detect academic citations using Regular Expressions and spaCy Named Entity Recognition.
- **Barclays** — London, UK
  Cybersecurity Intern — *Jun 2018 – Aug 2018*
  - Monitored static application security dashboards and restructured the team's database schema using SQL. 3rd place hackathon prize for developing a chatbot that recommends a Barclaycard product using Django and DialogFlow.
- **VLT Labs** — Kuala Lumpur, MY
  Software Engineer Intern — *Jul 2017 – Sep 2017*
  - VLT Labs is a venture builder based in Southeast Asia. Built chatbots using Angular, Node.js, MongoDB and spaCy to automate customer support. Implemented a frontend framework for an online retailer using object-oriented CSS.

Programming

Languages › C/C++, OCaml, Python, SQL, R, Java, Typescript/Javascript
Frameworks › TensorFlow, PyTorch, Scikit-learn, Tidyverse, Pyro, Spark
› Angular, React.js, Node.js, Docker, Kubernetes, Jenkins, AWS, Git

Selected Projects

- **Bayesian Online Changepoint Detection** My bachelor's thesis on time series analysis. Implemented the Log Gaussian Cox Process model in Python, with applications on bio-climatic data. Extended the model using Sparse Variational Inference and Multitask learning. Received the highest grade in my department of 91%.
- **TI-Lisp** Type Inference Lisp is a new functional programming language written in OCaml, C++ and LLVM, inspired by the Scheme language from MIT. Implemented features such as macros, in-built functions, code optimization and garbage collection.
- **Covid-19 Literature Search** A BERT-based search engine that retrieves Covid-19 academic journals using PyTorch (HuggingFace), React.js, Flask and GCP; based on generated sentence embeddings trained on the Covid-19 Open Research Dataset by the Allen Institute for AI.