Frank Yu

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EXPERIENCE

STRIPE Seattle, US

Senior Software Engineer - Traffic Team   Jan 2022 - Present

- Reduced P95 latency in Traffic charge path systems by 55% (>100 ms); performed a major migration to **Envoy** which optimized request routing between Stripe to partner data centers and enabled dynamic routing, de-risking future networking changes
- De-risked several product integration launches (Tap to Pay on iPhone, Google Pay Gateway, Shopify Payment Extension) by implementing payment token decryption flows (**Golang**) within tight externally committed deadlines
- Key contributor for Stripe's Payment Forwarding API; designed interfaces to minimize engineering time for adding new payment partners; built a merchant secrets storage system which decreased merchant onboarding time while improving product security
- Key contributor in planning and design discussions; coordinated several high-severity incident responses; defined team SLCs
- Organized weekly deep dives to drive intra-team knowledge transfer; spun up and mentored several new grads and one intern

Software Engineer - Traffic Team   Aug 2019 - Jan 2022

- Key contributor in saving 2.5MM in annual payment volume by adding request retry and hedging mechanisms to the charge; mitigated several high severity networking incidents without developer intervention; worked with **Golang, Envoy**
- Prevented top user churn by helping launch Stripe Card Image Verification before customer mandated deadline; onboarded this ML product acquisition into Stripe infra, migrating core ML flows onto **AWS** Lambdas to achieve security and product latency goals
- Eliminated 90% of file transfer failures to financial partners by making the **Golang** service async and adding retry mechanisms

IMPROBABLE London, UK

Software Engineer Intern - Operate Team   Jan - Aug 2018

- Owned a stress test initiative from design doc to completion; identified and resolved load balancing issues, race conditions, and ungraceful failures in critical distributed systems; built well-documented tooling later reused by other teams for stress tests
- Reduced iteration time for Spatial OS developers by building mocks of Spatial APIs to test against locally; Automated building, testing and release of this new tool across multiple platforms using **Bash**; developed binary update procedure in **Golang**
- Worked with **TypeScript, Kubernetes, gRPC, Docker, Google Cloud**

VEEVA SYSTEMS Toronto, CA

Software Engineer Intern   May - Aug 2017

- Made labeling doctors specialties more efficient by designing a chrome extension that highlights medically related words in arbitrary web pages; built the text tagging algorithm using TF-IDF
- Reduced engineering toil by building a workflow engine cache in **Java**, which enabled workflows to restart from the point of failure
- Enhanced web app security by developing a user permission system in **Java**

EDUCATION

UNIVERSITY OF WATERLOO

Waterloo, ON, Canada
Graduated 2019
Mechatronics Engineering, BASc
President's Scholarship
Top 10 Class Rank
Last Two Year Average: 90%

COURSEWORK

Algorithms and Data Structures
Image Processing (**MATLAB**)
Machine Intelligence (**Python**)
Programming for Performance (**C++**)
Real-Time Systems (**C**)

BOOKS

Site Reliability Engineering
Design Patterns (Gang of Four)
Neural Networks and Deep Learning

PROJECTS

MACHINE INTELLIGENCE COURSE PROJECTS   Jan 2019 - Apr 2019

- Developed a histopathology image classifier with **Tensorflow**; achieved 100% testing accuracy on classwide Kaggle competition; project on Google Colab
- Course topics include PCA, SVM, SOM, MLPs, CNNs, reinforcement learning
- Projects are completed in **Python**; learned to use **Tensorflow, Keras, Scikit-learn**

AUTOMATED EMBROIDERY MACHINE   Sept 2018 - Apr 2019

- Won $1000 award for mechanical design; completed project in a team of four
- Created a prototype that embroiders patterns with less than 1mm of error
- Designed stitching speed control mechanisms and software (**C++**)
- Helped develop g-code transmission and motor movement software (**C++**)

RESEARCH ASSISTANT   Jan - Apr 2017

- Researched the biological feasibility of different machine-learning algorithms
- Implemented neural networks, including backpropagation algorithm in **Python**

CAMERA POSITION RECONSTRUCTOR   Mar 2017

- Created a tool that uses intrinsic camera parameters to calculate camera location and rotation using a QR marker in photographs; Used **Python, OpenCV**