

# Vishaal Shah-Chittur

4B Systems  
Design Engineering

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## Experience

### Backend Engineering Intern – Verkada San Mateo, California 2019–20

- > Redesigned event notifications by implementing Jinja2 templates in Flask for dynamic content creation and 20% daily error rate decrease
- > Developed video streaming architecture with WebSocket/HLS to help reduce .m3u8 load time by 80% and feed latency to <2s behind live
- > Wrote new Go packages for OAuth, KMS-based cross-server audit-logs, handling segment data, and interfacing with camera firmware
- > Set up pytest unit test suites for 75% code coverage increase, integration tests and Docker build scripts for new services and deploys

### Software Developer – Localcoin Toronto, Ontario 2019

- > Designed front-end for Retail Platform DCE and Admin dashboard, developed Postgres data models and API's with JDBC
- > Managed project components (CircleCI, Nexus, Flyway) through multiple design cycles using Agile methods and tools
- > Built internal livenet block explorer on Linux via Bitcore, node, ZeroMQ to resolve ~33% of all incoming support requests
- > Created new website extensions for BeaverBuilder and Instapage use resulting in 12% Google Analytics engagement improvement

### Software Engineering Intern – All Blue Solutions Inc. Dallas, Texas 2018

- > Core API for ngDesk, building Java microservices with MongoDB and Redis to support Spring Boot app running Apache Kafka
- > Integrated new pubsub model (MQTT to STOMP.js) into main messaging interface to create new notification system through AWS
- > Constructed jsoup and db2jcc4 web scraper to aggregate and process large volumes of EMR data for external client projects
- > Created different Java utilities to automate parsing of IBM sales data into internal SugarCRM (MariaDB)

### Application Developer – Kenna Mississauga, Ontario 2016–17

- > Full stack development with MS SQL Server and IBM Lotus Notes, created diverse toolsets for multiple ongoing client projects
- > Enabled 50% app start time reduction by transposing relational table structures, built in-house PDF generation system for licensing
- > Updated primary network file transfer procedure to SFTP using Java modules written with JSch API

### IT Analyst – TD Canada Trust Etobicoke, Ontario 2016

- > Automated Monthly Operational Report metrics generation (retail and email) with VBA scripting for Enterprise Capacity Management
- > Wrote Python scripts (Splunk API) to tabulate and parse data on thousands of cloud VM's, consulted for research analysis, visualization

## Skills

### Languages & Frameworks

Go (Gorilla), Python (Flask, Django),  
Java (Spring Boot, Maven), C++,  
VBA, Swift, HTML, CSS (Material,  
Sass), JavaScript (React, Angular 6,  
node, jQuery), LotusScript,  
XSP/XML, PHP, Bash (cron),  
Arduino, MATLAB

### Databases & Servers

Dynamo, Redis, SQL (Postgres, MS,  
MySQL, MariaDB), MongoDB,  
IBM DB2, Domino, Notes, Apache  
Tomcat, Jetty, WebSphere Liberty

### Technologies

Git, AWS, Docker, Kubernetes,  
ElasticSearch, CircleCI, JIRA,  
Sentry, Logz, NewRelic, Jenkins

### Creative

SolidWorks, Logic Pro X, Sketch,  
Adobe Photoshop, Flash, MS Office  
Suite, XCode, Sublime, Eclipse,  
PyCharm, Postman

### Other

Social skills, leadership, quick  
learning, prototyping, user-centric  
design, adaptability

## Projects

### Xylosynth

Instrument synthesizer built through iterative design  
loops, feedback, user testing for Stage II RA patients

### Rock Paper Scissors EMG

Analog circuit to read electrode signals, implementing  
op. amplifiers, filters, wave rectifiers, peak detector

### Kōan – Hack The North 2016

Python panic attack prevention app built on Muse  
SDK with Firebase, Ruby on Rails, node.js, Twilio

### Dicejack

Digital blackjack simulation using Arduino UNO  
game programming and hardware configuration

### Dream Team Pong

Two-player ping pong game in Python with QtGUI

## Education

### University of Waterloo Honours Systems Design Engineering – BASc 2021 Candidate

**Awards:** President's Scholarship, Motorola Engineering Scholarship

**Relevant courses:** Advanced Eng. Math, Physics 1 - 3, Applied Linear Algebra, Data Structures & Algorithms, Circuits, Signals, Control Systems, Models, Optimization & Numerical Methods, Cognitive Ergonomics, Machine Intelligence, Computational SocSci