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EDUCATION

University of Toronto   **Sept 2015 – May 2020**
  Bachelor of Applied Science (B.AS.), Computer Engineering major

EXPERIENCE

FutureVault Inc.   **August 2019 – Present**
Software Engineering Consultant (AWS, Serverless, Java)
- Asynchronous, serverless SFTP file ingestion with OCR, file-name suggestion
    - AWS Transfer Family (SFTP), S3 (server-side data store), Lambda (file processing)
    - Secure RESTful API to communicate from Lambda to other parts of application
    - 100% production availability (as of May, 2020 - 4 months)
- POC's involving AWS+SAML SSO

FutureVault Inc.   **May 2018 – Aug 2019**
Software Developer Intern - PEY (AWS, Serverless, Java, Node.js, React.js, Python)
- Full-[MERN]-stack development with AWS serverless: Lambda, Step Functions, Cognito, API Gateway, S3, CloudFormation, EC2
- Design and implementation of robust, asynchronous, secure, serverless *Document Processing* model: Integration of API Gateway, Cognito (Kerberos-like auth), S3 (upload/download files), Step Functions, KMS
    - Leverages AWS Lambda's elastic scalability features: saves money from on-demand compute allocation while ensuring availability
    - "Zero downtime" for maintenance: Granularized and automated deployment of individual Step Functions Lambdas
- Design and implementation 3 internally used SDKs: Java SpringBoot, Node.js, React.js
- AutoFile: ML-based filing suggestion system (scikit-learn, SciPy)
- ELK stack: Performance profiling on Document Processing OCR bottleneck

RBC   **May 2017 – Aug 2017**
Developer Co-op (Angular.js, Java, SpringBoot)
- Several admin-side web-pages (full-stack)
- Oracle database query performance tuning with JPA+Hibernate+Spring Boot

TECHNICAL SKILLS

Skills	# Yrs Exp.	Highlights
Java	4	Spring/Boot, JPA, Apache: [Maven, Tika, Tomcat, OpenNLP], Mockito, AWS SDK
C/C++	5	make, cmake, OpenGL, libigl, gprof, gcov, wxWidgets
JavaScript	4	Node.js, React.js, NPM, Express.js, Angular.js, Mocha, Chai, AWS: [Amplify, Node SDK]
Database	3	MongoDB, MySQL, PostGres, CSC343 - Relational Database
AWS	2	Lambda, CloudFormation, API Gateway, Cognito, S3, Step Functions, IAM, KMS, EC2
Other	2+	Python: [scikit-learn, SciPy, AWS SDK], HTML,Scalar Vector Graphics (SVG), CSS, Agile, Git, REST, Atlassian tools, Tableau, ELK stack, UML, Docker

PROFESSIONAL CERTIFICATES & TRAINING

· Oracle Certified Associate (OCA) Java SE8, Oracle Corporation

PROJECTS

Implementation of *malloc* in C: Based on *dlmalloc*
· Dynamic segregated list to minimize internal fragmentation
· Dynamic preallocation, on-demand coalescing on free to maximize speed
· Rank 3 (out of 75) in class with 100% speed, 95% memory efficiency

C++ OpenGL Static Model Rendering Engine
· .OBJ file processing
· Per-fragment Blinn-Phong Shading
· 2D Model Textures
· Shadow Maps using FBOs and 3D Textures

General Layout Designer & Path Optimizer
· Travelling Salesman Problem: approached using Nearest Neighbor, 2-Opt, Simulated Annealing (SA) heuristics-based algorithms
· Dijkstra's Algorithm - shortest path
· 2-Opt: 10-15% improvement over Nearest Neighbor
· SA: 20-30% improvement over 2-Opt
· SA within 5% of *Held-Karp Lower Bound* (estimate of optimal tour length)
· Simplistic, user-friendly UI using Scalar Vector Graphics (SVG)

Function/Graph Visualizer with SVG
· Plots multiple functions on one x-axis and, optionally, on 2 y-axes via incremental sampling
· Fluid re-rendering (up to 60 FPS) during user interaction

ACADEMICS

Course	Description	Grade	Class Average
ECE454H1	Computer Systems Programming	A-	B
ECE552H1	Computer Architecture	B+	B-
CSC418H1	Computer Graphics	A+	A-
ECE419H1	Distributed Systems	A	B+
ECE568H1	Computer Security	B+	B+
CSC343H1	Intro to Databases	A	B+
ECE344H1	Operating Systems	A-	B-
ECE361H1	Computer Networks I	A-	B
ECE345H1	Algorithms & Data Structures	B-	B