HUGO KLEPSCH

hugo.klepsch@gmail.com · github.com/HugoKlepsch
Guelph, ON · 905-749-4627

WORK EXPERIENCE

Arctic Wolf Networks   *Waterloo, ON*
Senior Developer   January 2023 - Present
Member of technical staff   May 2018 - August 2018, January 2019 - August 2019, July 2020 - December 2023
- Used Esper, Apache Flink and Hadoop as part of a complex event processing pipeline to find patterns in unbounded series of real-time events
- Lead design and implementation of auto-scaling microservices supporting over 580000 messages per second
- Integrated new functionality without downtime into a data analysis pipeline processing 50 billion messages per day
- Used Agile development techniques to design, implement, and support software systems at all stages of the software life-cycle

Carnegie Technologies   *Waterloo, ON*
Native back-end developer   May 2017 - December 2017
- Developed native C++ GPS and ephemeris libraries for use in embedded devices
- Implemented REST style microservices using Node.js and RabbitMQ
- Designed and implemented C++ and Node.js RabbitMQ messaging library with support for a variety of usage patterns (Consumer, Requester)
- Designed and implemented C++ JSON manipulation and validation library with support for proprietary extensions to JSON schema specification

EDUCATION

University of Guelph   *Guelph, ON*
B.Comp. Software Engineering (Co-op), Honours. Marketing minor   September 2015 - April 2020
- Dr. Mary McLeish Scholarship recipient (Highest GPA in Software engineering major)
- 2018 Braithwaite Business Scholarship
- Dean's Honours list

PERSONAL PROJECTS

HugoKlepsch/Go-Snake
June 2021
- Created "Snake" AI to battle other snakes in battle-royale snake competition
- Won 1st in Platinum league out of hundreds of other competitors
- Various versions used Dijkstra and A* path-finding algorithms to optimize food intake
- Used Minimax algorithm to find game moves with highest chance of success

VOLUNTEER HISTORY

Mentor, programming teacher and alumni   *Burlington, ON*
FIRST Robotics Competition (FRC) team 2200   September 2013 – Present
- Practical experience modeling and implementing effective control algorithms for robot mechanisms including: arms, elevators, flywheels, holonomic and differential drive platforms
- Used PID + Feed-forward closed-loop control, OpenCV computer vision, trapezoidal motion profiling, Bézier curve path following for autonomous control of robot
- Used encoders, potentiometers, limit switches, line followers, LiDAR, ultrasonic rangefinders & cameras as sensor data for control algorithms
- Captured & annotated training data, fine-tuned YoloV8 and deployed real-time object detection (bouding boxes) model to TensorRT platform
- Taught high-school students about control flow, program structure, git & the above

TECHNICAL STRENGTHS

Computer Languages

Python, Go, Java, C/C++, Bash, Node.js

Tools & Tech

Linux, Git, Docker, K8s, Prometheus metrics, Command-line tools, Kafka, Avro, Hazelcast, Flink, Esper, Hadoop, Redis, PostgreSQL, ElasticSearch, AWS-{S3, SQS, Lambda, ElastiCache, CloudFormation, CloudWatch, EC2, ECS, ECR, EMR, GuardDuty, Athena}, CUDA, OpenCV, TensorRT, FreeCAD, OnShape, UML, RabbitMQ, Vim, LaTeX

Development Practices

Agile: {Scrum, Spiral}, Waterfall, DevOps, CI/CD, Test Driven Development, Risk management, Technical reviews, Quality assurance