

Christopher Capobianco, MSc

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Skills

Programming Languages: Golang, C++, C, FORTRAN, R, Matlab

Scripting Languages: Python, Node, Bash, VBScript

Machine Learning: Keras, PyTorch, TensorFlow, Scikit-learn, NLP, Pandas, Matplotlib

Databases: PostgreSQL, MySQL, MariaDB, SQLite, Redis, DynamoDB

Technologies: AWS, GCP, JSON, XML, Regular Expressions, OpenMP, MPI, OpenAPI, OCR, Streamlit, Bitcoin

Tools: Docker, Kubernetes, RabbitMQ, Kafka, Git, Grafana, Prometheus, Metabase, Flask, FastAPI, Django, Express

Concepts: Server-Client, Micro-services, Distributed Systems, Object-Oriented Design, Parallelism

Mathematical & Numerical Techniques: Differential Equations, Fourier Analysis, Root Finding, Minimization

Experience

R & D Team Lead, Arctic Wolf Networks – Waterloo, ON Jan 2022 – Aug 2024

- Managed a team of five software developers, led to completion on two major projects:

1. Modularized monolithic Agent client, making updates less arduous for customers
2. Extricated a tightly coupled library from the macOS Agent, unblocking company IPO

Member of Technical Staff, Arctic Wolf Networks – Waterloo, ON May 2020 – Jan 2022

- Decreased vulnerability diagnosis by one week for 95% of customers, by collecting more data during scan
- Decreased Agent on-boarding time by 90%, by creating a Python script to handle bulk scan group management

Software Developer, Green Brick Labs – Kitchener, ON May 2015 – Mar 2020

- Created micro-service Node.js application to replace PHP website for a Sports Book
- Designed and built crypto-currency financial system in Node.js
- Integrated payment providers into a Golang micro-service web application

Manager, Bank of Nova Scotia – Toronto, ON Oct 2014 – Apr 2015

- Consolidated execution of value at risk models in production
- Validated consolidated model agreed with existing risk models

Research Developer, Prylynx Corporation – Kitchener, ON Apr 2012 – Oct 2014

- Created ML document classifier using SVM, achieving 85% accuracy with humans in the loop
- Created UI to organize classified documents, and permit updating incorrect classifications

Research Assistant, Queen's University – Kingston, ON Sept 2006 – Aug 2011

- Published investigation modeling giant planet formation via planetesimal accretion in a gaseous disk
- Parallelized SWIFT numerical integrator, achieving linear speed up

Projects

ML Portfolio huggingface.co/spaces/ccapo/portfolio

- Fine-tuned Meta's Llama 3.1 (8B) Instruct to respond as a Math Assistant
- Created a Random Forest model to predict a document's classification, using OCR text
- Created a three layer LSTM model to generate novel musical compositions

BlockRing github.com/ccapo/blockring

- A proof of concept for a self-contained, blockchain ring

Education

St. Mary's University – MSc in Astronomy 2006

University of Toronto – BSc in Astrophysics 2002