Ali Pardhan

AliK9807274@gmail.com Vancouver, Canada Portfolio Profile

PROFESSIONAL EXPERIENCE

Amazon, *Software Development Engineer* Sep 2022 – Feb 2024

- Launched Prime membership pausing in India, leading to a 65% decrease in cancellations
- Migrated major service to ECS & Graviton, decreased on-call pages by 3x
- Migrated several dependencies, and implemented GraphQL support, while **communicating** API gaps to the team in India. Resulting in decreased **fan-out** by consolidating aggregation-layer dependencies
- **Security**- Cloud security and network configuration, Fortify scanner for vulnerabilities in code
- **DevOps**- Maintained CI/CD pipeline & tests, supported tickets, set up metrics & alarms
- **SRE**- On-call during **Prime Day**, handled outage spanning several teams, authored C*orrection Of Error* document

UBC, *Data Scientist & Computational Biology* May 2022 – Aug 2022

- Identified patterns in microbial ecology with graph theory algorithms & graph neural networks
- Decreased memory usage by 50% and hyper-optimized code, due to high dimensionality of genes

MARS Lab at SFU, *Data Scientist in Robotics* May 2021 – Aug 2021

- Expanded a simulated model in ROS of a robot following a human walking from in-front
- Utilized **Monte Carlo Tree Search** to greedily select future movements from Q-net predictions

TELUS Communications, *Security Data Scientist* May 2020 – Dec 2020

- Created and deployed an unsupervised anomaly detection system for bot detection on logs from Identity & Access Management platform, using PyTorch, PYOD and Google Cloud Platform
- Detected 30% of log-in attempts were from brute forcing attacks

Thales Canada, *Information Security Analyst & Data Engineer* May 2019 – Dec 2019

- Designed and automated **digital forensics** processes, assisted in Incident Response
- Led firewall optimization efforts, coordinated with external teams
- Utilized Nessus scanner for threat hunting, vulnerable remediation, and compliance checking

EDUCATION

Simon Fraser University, *Cognitive Science* Jan 2018 – Aug 2022

- Computer Science: Machine Learning, Data Mining, NLP, Robotics, Cybersecurity, Computer Vision
- Linguistics: Formal syntax and semantics, topic modeling, and text generation & summarization
- Philosophy: Predicate calculus, model logics, formal methods, and knowledge representation

TECHNICAL SKILLS

- **Languages:** Python, Java, C++, JavaScript, GraphQL, SQL
- **Libraries**: PyTorch, OpenCV, NLTK, spaCy, AWS SDK, React, pySpark
- **Skills**: Dependency Injection, Testing, Debugging Issues in Prod, **Reverse Engineering** REST APIs
- **Tools:** AWS**,** GCP, Docker, Kubernetes, Git, Splunk, Elasticsearch, Nessus scanner, SAML, OAuth, Spark, Hadoop, Kafka, RabbitMQ
- **AWS:** CloudFormation, ECS, DynamoDB, S3, SNS, Lambda, CloudWatch, CodePipeline, CodeBuild, GuardDuty and API Gateway

DOMAIN KNOWLEDGE

- **Computational Linguistics**: Generation, summarization, multi-label classification of Text
- **Cyber Security**: Digital forensics and incident response, identity and access management
- **Data Mining:** Web scraping protected data, feature engineering, dimensionality reduction
- **Financial Forecasting**: LSTMs trained on news documents, technical indicators, related stocks
- **Robotics**: Reinforcement learning, optimal control theory, SLAM, Digital Signal Processing

EXTRACURRICULAR ACTIVITIES

Key Readings

- Designing Data-Intensive Applications - Martin Kleppmann
- System Design Interview - Alex Xu, Sahn Lam
- Solution Architect Handbook - Shrivastava, Saurabh

Personal Projects

- Biomedical Imaging 🔗 , Classifying EEG signals produced by the stimulus of seeing a digit and thinking it, with a ConvLSTM. Detecting infections from 2D & 3D images, while trying to minimize training data and false positives
- Machine Learning for Cybersecurity 🔗 , Anomaly Detection using a variety of unsupervised techniques such as a Gumbel-Softmax variational autoencoder. Network Intrusion Detention and optimizing accuracy with respect to the dimensionality of data
- Computational Finance 🔗 , Time series forecasting with ARIMA, VAR, technical indicators, and LSTM neural networks. Created an algorithmic trading system that beat the S&P500's 5-year returns. Spent over 300 hours and applied learnings to my first research paper in Spring 2020

Professional Development

- Team lead at Vancouver DataJam hackathon '23
- President of the Cognitive Science Student Society '21
- Neural Information Processing Systems '20 & '21
- Symposium on Advances in Approximate Bayesian Inference '19
- NWHacks '19 & '20
- SFU Tech: 1st place in case competition
- Trend Micro CTF: 1st place in Offensive operations
- Canadian Cyber Defence Challenge: 2nd place in provincial competition