

# Stevan Mikha

stevanmikha@gmail.com | (306) 591-0101 | Regina, SK, Canada

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## EDUCATION

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### University of Regina

2016 – 2019

*Master of Science (M.Sc.), Electronic Systems Engineering, 3.8 GPA*

*Regina, SK*

- **Research** – Development of network intrusion and anomaly detection using statistical modeling. Utilized data preprocessing, feature engineering, statistical evaluation, and deep learning algorithms with LSTM and CNN architectures.
- **Datasets and Tools** – NSL-KDD and CSE-CIC-IDS2018 datasets authored by Canadian Security Establishment (CSE). Utilized TensorFlow with Keras, Pandas, Spark, and Scikit libraries for data preprocessing and statistical modeling.
- **Network Security and AI Coursework** – Advanced Topics in Network Security, Smart Grid Architecture, Design, and Analysis, and Intelligent Systems

### University of Regina

2012 – 2016

*Bachelor of Applied Science (B.A.Sc.), Electronic Systems Engineering*

*Regina, SK*

## WORK EXPERIENCE

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### Dot Technology Corp. (<https://seedotrun.com>)

November 2018 – Present

*Hardware and Network Systems Lead*

*Emerald Park, SK*

Member of the Research and Development agile team advising on network and data architecture for autonomous machinery and vehicles, reporting to the Director of Development and CEO.

- **Cloud and Remote Vehicle Security** – Deployed Microsoft Azure Key Vault (key management system) for managing remote vehicles (Linux OS) with SSH certificates, build-pipeline authentication, and X.509 certificates via REST API.
- **Microsoft Azure Security** – Designed IKEv2 VPN hosted on Azure cloud and distributed resources, network security groups (NSG), and virtual network (VNET) architecture for multiple Azure subscriptions.
- **Microsoft Azure IoT Hub** – Implemented IoT Hub (authentication with X.509 CA certificates) and Stream Analytics with Nvidia Xavier edge computer (MQTT communication) for data ingestion system of machine learning pipeline.
- **Microsoft Azure Sentinel** – Architected and implemented Azure Security Centre for monitoring and threat detection and integrated associated data into Azure Sentinel (SIEM) for data analytics and business intelligence reporting.
- **LiDAR Data Analysis** – Utilized DBSCAN statistical algorithm to rasterize and cluster gigabytes of LiDAR data for real-time object detection system. Object-oriented programming with python socket interface over UDP and TCP.
- **Systems Design** – Summarized ISO 26262 and ISO 18497 recommendations for safety controller design documentation, writing unit tests around safety controller software (CAN based), and systems design for overall autonomous system.

### SaskEnergy - TransGas

September 2016 – November 2018

*SCADA & Automation, Engineer-in-Training*

*Regina, SK*

Member of the Research and Development team. Designed and supervised safety critical systems, while managing and leading several \$1 million-dollar projects.

- **Security Vulnerability Scanning** – Utilized OpenVAS and Metasploit within lab environment to scan CVE specific automation controllers and created reports to detail analysis and exposure risks.
- **Analytics Reporting** – Generated automated reporting scripts and visualizations manipulating large data sets on machine intelligence with SQL and Python for business users and external customers.
- **Data Pipeline** – Wrote technical documentation and business requirements for data flow and process diagrams between SQL database and various remote instrumentation sensors.
- **Operational Technology (OT) Hub Router Upgrade** – Assisted in building replica province-wide network based on proposed architecture plans from Senior Engineer and Cisco System Research whitepaper “Converged Plantwide Ethernet (CPwE)” utilizing Cisco Unified Computing System (UCS), ISR4451 routers, and CentOS linux virtual machines.
- **Controller Security Standard** – Performed cybersecurity risk and vulnerability assessments, alongside financial analysis to standardize remotely deployed PLC controllers, saving \$400,000 annually.

## EXTERNAL PROJECTS

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**Prairie Robotics (<http://prairierobotics.com>)**

**December 2018 – Present**

*Data Analytics and Network Engineering*

*Regina, SK*

Small-scale startup team, working towards minimum viable product to be released in November 2019. Utilizing computer vision on distributed systems, integrated with Amazon Web Services (AWS) to classify vehicle weight and waste types.

- **AWS Security** – Architected VPCs, NACLs, Security Groups, and logging for general Azure security.
- **AWS Data Pipeline** – Utilized Apache Spark (PySpark) for preprocessing data and Amazon SageMaker for training and estimation of weight and waste type models.
- **Camera Streaming** – Utilized OpenCV, gstreamer, and real-time streaming protocol (RTSP) to stream live-camera feed on Nvidia Jetson Nano with Lucid GigE industrial camera.
- **2019 Innovation Saskatchewan Waste Diversion Challenge** – Awarded \$10,000 for waste diversion challenge.
- **2019 Saskatchewan Startup Summit** – Awarded best pre-revenue startup from Conexus Incubator, received \$10,000.

## TECHNICAL SKILLS

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**Software** Python, C++, and SQL

**Tools, Frameworks, and Libraries** Tensorflow, Keras, Apache Spark, Git, Wireshark, Kali, OpenVAS, and nmap

## LEADERSHIP & SERVICE

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- *Advisor*, Standards & Compliance at Dot Technology Corp., advisory on autonomous systems design (2018 – Present)
- *Advisor*, Generation Energy Youth Committee at SaskEnergy, elected by Executive Membership (2017 – 2018)
- *Energy Futures Lab and Policy Committee member*, Engineers with Borders, general member (2018)
- *Board Member*, University of Regina Students Union (URSU), elected by peers (2014 – 2016)
- *Innovative Design*, Western Engineering Competition, Kelowna, BC (2015)