

RUI (RAY) NIAN

Edmonton, AB, Canada
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EDUCATION

UNIVERSITY OF ALBERTA

MSC. OPTIMAL CONTROL

Exp. Sept 2019 | Edmonton, AB
GPA: 3.93 / 4.00

BSc. IN CHEM. ENG. (Co-OP)

Grad. June 2017 | Edmonton, AB
GPA: 3.85 / 4.00

COURSERA

DEEP LEARNING SPECIALIZATION

Completed Jan 2018 | Online

MACHINE LEARNING

Completed Aug 2018 | Online

ORGANIZATIONS

VP FINANCE

GRAD STUDENTS' ASSOCIATION

- Manage 2018/2019 Budget
- In charge of raising funds

TEACHING ASSISTANT

CHE 358, ENGG 404

- Teach intro. machine learning
- Teach safety and risk management

SOFTWARE ENGINEER

AUTO. ROBOTIC VEHICLE PROJECT

- Develop controls for best operation
- Debug sub-optimal behaviours
- Work with multi-disciplinary team

LINKS

LinkedIn:// [ruinian](#)

Medium:// [@ruinian](#)

StackOverflow:// [ruinian](#)

GitHub:// [ruinian](#)

SKILLS

SOFTWARE

Proficient

Python • Tensorflow • MatLab

Tableau • Spotfire • \LaTeX

MS Office • Linux/MacOS

Experience

Java • Subversion

SUMMARY

- 30 months work experience in applicational machine learning and data science
- Experience in predictive modeling and classification machine learning methods
- Developed various different reinforcement learning (RL) and deep RL models to identify optimal control strategies for manufacturing processes
- Experience in building RNNs with LSTM/GRU and CNNs using Tensorflow

EXPERIENCE

CANADIAN NATURAL RESOURCES LTD. | DATA SCIENCE Co-OP

May 2016 – Dec 2016 | Calgary, AB

- Built data analyzation interface using Excel VBA and Tableau. Allowed team to make \$10M+ decisions regarding future strategic development
- Modelled and analyzed results for future oil sands mining plans in ARENA software to identify optimal strategies
- Experience in working in a multi-disciplinary team, designing controls for new oil sands processing plants

ARC RESOURCES LTD. | DATA SCIENCE Co-OP STUDENT

Jan 2015 – Aug 2015 | Calgary, AB

- Created Spotfire GUI for a large oil field in Northern Alberta; allowed creation of custom visualizations for 80+ variables and included an interactive map
- Explored innovative well designs by analyzing millions of data using supervised and unsupervised learning
- Built data pipeline for oil and gas production data using Excel; complied spreadsheet contained 80+ variables for over 400 wells

UNIVERSITY OF ALBERTA | BIOINFORMATICS RESEARCH ASSISTANT

May 2014 – Sept 2014 | Edmonton, AB

- Performed data pre-processing via outlier removal, feature scaling and feature engineering
- Maintained and improved toxicity assessment MATLAB analyzation codes used for principle component analysis, hierarchical k-means / k-medoids clustering, and drug effect classification
- Aided in improving scalability of feature extraction MATLAB GUI

RESEARCH

ANALYTICS AND CONTROLS LAB | GRAD RESEARCHER

Sept 2017 – Present | Edmonton, AB

- Comparing Model Predictive Controls against Deep Deterministic Policy Gradient reinforcement learning (RL) on MIMO continuous systems
- Developed reinforcement learning Python script to find optimal set points for various manufacturing processes
- Developed off-policy Q-learning controller for a water treatment plant, resulting in 350K operating savings, while meeting strict gov't regulations
- Developed SMART alarm system with alarm prioritization and redundant alarm removal via RL, pattern recognition and data mining algorithms
- Knowledge and experience in building supervised, unsupervised, and reinforcement learning models using Python