KARL NORTHRUP

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EDUCATION

Master of Science

Computer Science
Georgia Institute of Technology
Jan 2020 – Present
4.0 GPA

Graduate Certificate

MS Computer Science Foundations
Kennesaw State University
awarded May 2019
4.0 GPA

Bachelor of Science

Chemical Engineering
Texas A&M University
summa cum laude, May 2012
3.94 GPA

EXPERIENCE

Project & Process Engineer

Audubon Engineering
Jun 2017 – Jun 2020
SomeCity, ST

O&G Technology Consultant

OTM Technology
Dec 2016 – Apr 2017
SomeCity, ST

Process Engineer

W.S. Nelson
Sep 2012 – Nov 2016
SomeCity, ST

GRADUATE COURSEWORK

GaTech | KSU

Machine Learning for Trading
Artificial Intelligence for Robotics
Software Development Processes
Computer Architecture & Op. Sys.
Datastructures & Algorithms
Foundations of Programming
Mathematical Structures for C.S.
Database Design

SUMMARY

Chemical Engineer and Georgia Tech C.S. graduate student seeking software development role applying highly transferable engineering experience solving complex problems within multidisciplinary teams.

Proven ability to deliver successful project engineering outcomes operating within often disjoint industry standards, project specifications, and client requirements.

PROJECTS

CHEMICAL ENGINEERING | HIGHLIGHTS

Ethylene Terminal Expansion & Facility Restart

- Led process engineering effort from initial design thru Issue for Construction for major well storage facility & transfer terminal expansion
  – increased overall production capacity by 35 %

- Spearheaded process research and development to identify and redesign key equipment & unit operations requiring remediation for facility restart
  – delivered +/- 10% capital estimate for planned $25 million restart

Offshore Separator for BP & Shell Chemical

- Delivered 17,000 barrel/day three-phase oil & gas separator for joint stakeholder effort from initial sizing and detail design to final shop inspection
  – augmented platform throughput providing $600k per day in added revenue

SOFTWARE DEVELOPMENT | ACADEMIC

Machine Learning Stock Trader **Python, Pandas, Numpy, pytest**

- Designed APIs implementing regression & classification learning models using Decision Tree, Random Forest, and Bagging algorithms to deploy strategy learners
- Performed statistical analysis on time-series data to calculate rolling statistics on dataframes and plot technical indicators
- Manipulated financial data by reading CSV files for multiple stocks & slicing, normalizing, and plotting calculated portfolio metrics
- Created a custom technical indicator to identify buy and sell opportunities and a market simulator to test trading strategies versus a benchmark

JobRank Android App **Java, SQLite, jUnit Tests**

- Deployed agile software development practices to plan, design, and document development of a mobile application allowing a user to input job offer data for ranking and comparison
- Collaborated via git and Github to implement and iterate on project design and testing frameworks to satisfy user requirements

TextModifier Utility & Library **Java, jUnit Tests**

- Wrote a command line application allowing a user to specify a text file and multiple arguments to manipulate file contents with options to sort, trim, add prefixes, and add/remove lines containing a substring
- Developed a java library version of the application to allow other software packages to interface with the utility
- Utilized a Test Specification Language to evaluate code coverage and develop a testing harness ensuring expected return values and protections against unsupported user input remained consistent across the development cycle

DATABASE APPLICATIONS | FREELANCE

DB Cranes – Inspection Tracking **Access**
Thomas Reprographics – Pipe Yard Inventory Tool **Access**