

# KARL NORTHROP

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## EDUCATION

### Master of Science

#### Computer Science

Georgia Institute of Technology  
Jan 2020 – Present 📅  
4.0 GPA

### Graduate Certificate

#### Computer Science Foundations

Kennesaw State University  
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

2016 – 2020 📅  
SomeCity, ST

### O&G Technology Consultant

#### OTM Technology

2016 – 2016 📅  
SomeCity, ST

### Process Engineer

#### W.S. Nelson

2012 – 2016 📅  
SomeCity, ST

## GRADUATE COURSEWORK

### GaTech | KSU

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

## SUMMARY

Engineer and graduate student with highly transferable engineering experience solving complex problems within multidisciplinary teams. Proven ability to deliver successful outcomes maneuvering between often disjoint project specifications, industry standards, and client expectations.

**TODO:** decide which ChemEng projects to list & revise all descriptions.

## PROJECTS

### CHEMICAL ENGINEERING | KEY ACHIEVEMENTS

#### Ethylene Facility Expansion

Hysys

- Led Process Engineering effort to debottleneck and expand major ethylene terminal
- Responsible for process design, optimization, and sizing of capital assets
- Primary engineer from front-end engineering design phase to Issue for Construction

#### Offshore Separator Package

Hysys

- Designed and developed 500k barrel/day separator for joint BP & Shell effort
- Led process engineering effort from conception to final shop inspection

### SOFTWARE DEVELOPMENT | ACADEMIC

#### ML Stock Trader

Python / Pandas

- Built a market simulator to process pricing data, orders, and produce portfolio metrics
- Researched stock indicators and tested with manual logic strategy to establish a baseline
- Used machine learning techniques to develop a strategy learner using Random Forest & Bag Learners

#### JobRank Application

Android / Java / SQLite

- Worked with a team to develop UML, Design & Description documents per Project Specification
- Developed job tracking application to rank various job offers for comparison

#### TextModifier Utility & Library

Java / JUnit

- Used Test Specification Language to develop JUnit tests to provide sufficient coverage
- Wrote a command line utility and Java library allowing the user to modify text based on several options and arguments

#### Mars Glider

Python / Numpy

- Markov AI algorithms to allow Glider craft to navigate randomly generated fields of obstacles
- Developed SLAM algorithm to solve warehouse problems to optimize paths for highest reward

### DATABASE APPLICATIONS | FREELANCE

#### DB Cranes – Inspection Tracking

Thomas Reprographics – Pipe Yard Inventory Tool

Access  
Access