Insu Kim

insu91@gmail.com www.linkedin.com/in/insu-kim insu91.github.io

Education

M. S. Computer Science - Machine Learning, Georgia Institute of Technology **Expected Dec 2024**

B. S. Chemical Engineering, Brigham Young University **Apr 2019**
GPA: 3.77/4.00

Courses: **Programming for Engineers; Statistics for Engineers and Scientists**; Process Dynamics and Control; Chemical Process Plant Design; Semiconductor Processing

Skills

- Programming: **Python** (NumPy, Pandas, scikit-learn); **Java; SQL** (MySQL, PostgreSQL, NoSQL, MangoDB, etc.); Linux (Bash/Shell); MATLAB/Octave; Git
- Data Science: : **Machine Learning** (linear/logistic regressions, SVM, K-means clustering, PCA, etc.); Data Engineering (ETL/ELT, SQL); Data Visualization (Python, Tableau, Excel); **Mathematical Modeling-Statistical Analysis**
- Cloud Computing: **AWS (Certified Cloud Practitioner, May 2022);** IBM Cloud
- Chemical Engineering: **Advanced Process Control/Process Automation; PLC Programming (Siemens TIA PCS7, Honeywell MeasureX);** FE Certified (Jun 2020); SAChE Certified (Safety Certification for ChEs)

Work Experience

Process Control/Control Systems Engineer, Genesis Alkali, Green River, WY **Jun 2019 – Present**

- Contributed to multi-million-dollar DCS conversion projects as a main technical engineer (Honeywell MeasureX to Siemens SIMATIC PCS7 V9) for multi-project-level chemical processing plants. Job details include PLC logic conversion, HW/Netpro configuration, IO channel loop test, PI data historian reconfiguration, Factory Acceptance Test, designing cutover plan, etc.
- Contributed to a new cooling tower commission project as a lead controls engineer. Job details include PLC programming for each equipment (speed control with Toshiba G7/G9/Yaskawa VFDs for cooling tower fans, Automated de-icing operation mode with sequential logic, process/equipment-protect interlocking logics, etc.), HW/Netpro configuration, IO channel loop test, PI data historian configuration, Factory Acceptance Test, designing cutover plan, etc.
- Resolved nonlinear process optimization problem on an industrial burner system (calciner spill temperature control) by implementing Brainwave controller (model predictive controller by Andritz Automation) in Siemens DCS system (SIMATIC PCS7) and saved operating cost by $10,000 /month

Lithium Ion Battery Design Research Assistant, Department of Chemical Engineering, BYU **Sep 2018 – Apr 2019**

- Re-designed solid-state polymer electrolyte fabrication procedure and increased production yield by ~50%
- Built python/excel computational program to calculate desired cathode thickness given an active material loading and improved processing time by ~10%

Process Engineering Intern, Owens Corning, Nephi, UT **May 2018 – Aug 2018**

- Developed process model for molten glass level control and increased the process efficiency by ~15%
- Built HMI (Human Machine Interface) frame using various automation platforms (Wonderware & Ignition) for molten glass process analysis as part of operation optimization project

Process Control/Optimization Research Assistant, Department of Chemical Engineering, BYU **Jun 2017 – Aug 2018**

- Developed 6 reservoir optimization scenarios using Python to achieve operating objectives by controlling and scheduling injection and production wells in simulated reservoir system
- Increased NPV of simulated reservoir systems ~10% by optimizing control parameters and scheduling of production and injection wells

Mathematical Modeling Research Assistant, Department of Physical and Mathematical Science, BYU **Jan 2017 – Jan 2018**

- Analyzed behaviors of various differential equations controlling variables and parameters
- Develop mathematical models to analyze various engineering processes/systems using MATLAB

Sergeant, Republic of Korea Army **Dec 2011 – Sep 2013**

- Analyzed statistical data on encrypted communication performance for 4 companies within a battalion and built training modules based on the results
- Trained specialized communication techniques and revised signal code as a squad commander