

Experience

Washington Metropolitan Area Transit Authority (WMATA), Washington DC

Mechanical Controls Engineer

Jun 2019—Present

- Writing and reviewing standards documentation for the controls of mechanical components.
- Reviewing contract submittals and participating in substantial completion inspections of mechanical controls systems to determine compliance with standards and proper functionality.
- Supporting maintenance personnel with troubleshooting of mechanical equipment in the field.

Praxair, Tonawanda NY

Advanced Process Controls Engineer

Jul 2013—May 2018

- Developed and deployed model predictive control (MPC) projects to improve efficiency and reliability at nine cryogenic air separation plants globally:
 - Identified models of plant operation from historical data.
 - Programmed controller behavior in simulation.
 - Installed controllers on site and created operator HMIs.
 - Tuned controllers after feedback from stakeholders and observing real-world behavior.
 - Saved ~\$300k/year (each) through market-specific optimizations.
- Simplified system upgrades and deployments with PowerShell scripts and Hyper-V.
- Configured and demonstrated SCADA and MPC simulations for biennial internal training.
- Supported networking and systems issues globally.
- Monitored and supported MPC performance in the Scandinavian region.

University of Massachusetts Lowell, Lowell MA

Research Assistant

Jan 2012—Jul 2013

- Wrote Perl scripts to convert rheological data formats. <https://github.com/iemcd/rheology>
- Published: McDougall, I., N. Orbey, and J. M. Dealy, "Inferring meaningful relaxation spectra from experimental data," J. Rheol. **58**, 779 (2014) <http://dx.doi.org/10.1122/1.4870967>

Education

University of Massachusetts Lowell, Lowell MA

BSE Chemical Engineering, Mathematics Minor

May 2013

Skills

Languages: JavaScript, R, PowerShell, MATLAB, Perl, bash, VBA, Python, PLC Ladder Logic

Software: Aspen DMC+, GE iFix, Hyper-V, COMSOL Multiphysics, Simulink, Aspen Plus, Matrikon, SIMCA P+, Microsoft Office, Microsoft Visio, AutoCAD, Autodesk Revit

General: Data Analysis, Statistics, Process Control, Chemistry, Programming, Process Engineering, Design of Experiment, Process Simulation, Distillation, OPC