

# Nathan Homka

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## Links

Website / [Nathan Homka](#)

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Github / [nhomka](#)

## Education

### University at Buffalo

B.S. Chemical Engineering  
Buffalo, NY | May 2016

## Skills

### Languages

#### Preferred

Python

C#

SQL

#### Familiar

VBA

Powershell

Java

### Technologies

SQL Server

AWS

OSISoft PI SDK

OPC UA/DA

DevExpress

## Programming

### Monopoly

Text-based playing and modeling

### Weather

Forecast reliability

### Chemical Plant

Let's make some lactic acid!

## Experience

### Software Engineer

GP Strategies | December 2016 - Present

- Lead developer of 3 products: VirtualPlant (sandbox modeling), EPReporter (data reporting) and GPCALCS (thermodynamics utility)
- Created tools to retrieve, manipulate and store data from PI, OPC, and EPArchive historians
- Expanded on pattern recognition technology to detect anomalies in plant or equipment conditions
- Planning and proof-of-concept implementation using AWS for a migration to cloud services
- Added numerous features to multiple custom Excel add-ins, including data-retrieval functions, calculations and live-studies

### Applications Engineer

GP Strategies | May 2016 - December 2016

- Responsible for configuration and support of central monitoring server overseeing more than 5,000 MW of power generation
- Analyzed and modified complex P&IDs for thermal modeling of coal and natural gas power plants
- Involved as a trainer for power plant performance and software training courses on-site at remote plants

### Engineering Intern

Avox Oxygen Systems US | September 2015 - April 2016

- Developed a pattern finding tool to improve development and manufacturing time of new chemical oxygen generators
- Organized and updated large stores of spreadsheets with detailed test results into a searchable format using VBA

## Projects

### Heat Exchanger Feasibility Study

Xylem Heat Transfer | September 2015 - February 2016

- Drafted and built a prototype to test the feasibility of using 3-d printed heat exchangers for swimming pool heaters
- Performed materials survey, FEA/burst testing for pressure analysis

### Chemical Plant Design

University at Buffalo | August 2015 - May 2016

- Designed a lactic acid production plant, including building layout, business economics, and heat/mass balances
- Optimized theoretical plant thermodynamics over dozens of iterations, vastly reducing waste and increasing efficiency