

Nathan Homka

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EXPERIENCE

Senior Software Engineer

December 2016 – Present

Toshiba / EtaPRO LLC (Formerly GP Strategies)

Remote, Buffalo, NY

- Product owner of VirtualPlant (thermodynamic modeling), EPReporter (historical data reporting)
- Replaced vulnerable .NET BinaryFormatter serialization with a version safe json serialization wrapper to allow for much easier updating of large object models
- Designed a new data pipeline to support solar farm performance monitoring, requiring heavy post-processing of batched datasets.
- Developed a REST API using ASP.NET / Swagger to expose plant performance data to data analysts for more efficient processing
- Created Excel add-ins using Excel-DNA and VSTO to allow for automated spreadsheet data reporting
- Developed a script parser and compiler using F# to allow for efficient bulk execution of custom scripts
- Improved performance of computationally demanding data filtering by 20% with a new filtering algorithm
- Migrated services from GenuineChannels/.NET Remoting to gRPC
- Implemented async methods for loading forms, user controls and trends, creating a much smoother user experience when interacting with the client
- Supported acquisition of EtaPRO business by Toshiba, providing guidance on company outlook and opportunities for integration

Applications Engineer

May 2016 – December 2016

GP Strategies

Buffalo, NY

- Responsible for configuration and support of central monitoring server overseeing more than 6,000 MW of power generation
- Implemented improvements to a database generator application, which converts plant design data to a standardized format
- Lead over 100 hours of training in power plant performance and EtaPRO system admin training courses
- Supported the research and design of an advanced boiler heat model

VOLUNTEER

Secretary - Board of Directors

Sept 2022 – Present

California Music Center

San Francisco, CA

- Maintain and update organization bylaws, board member information, and other organization records
- Assist in preparation of board meeting packets, record detailed meeting & committee notes
- Participate in Financial & Event Planning Committees, perform fundraising and donor cultivation duties

PROJECTS

Simple Audio Processing | *Python, pyaudio, aubio, wave, matplotlib*

July 2020

- Some simple programs/experimenting in audio processing. Allows for basic processing and analysis of audio inputs and monophonic pitch detection.
- Designed a simple console game where a player has to correctly guess the pitch of an output note, or a player has to correctly play a note when prompted with a pitch (can be done by whistling, humming, or on an instrument).

Weather Forecast Reliability | *Python, pylab, Bash*

May 2018

- Analyzing and visualizing weather forecast reliability using python. Web data is scraped from the national weather service using a simple bash script and cronjob, then forecasts are compared with actual data to discern the reliability of forecasting over time.

EDUCATION

SUNY University at Buffalo

Buffalo, NY

Bachelor of Science - Chemical Engineering

Aug. 2012 – May 2016

TECHNICAL SKILLS

Languages: Python, C#, SQL, F#, VB.NET, Powershell, Javascript

Frameworks: .NET, ASP.NET, Entity, React, gRPC, NUnit/xUnit

Developer Tools: Git, SQL Server/PostgreSQL, OSISoft PI SDK, VS Code, Redis, Kubernetes