Jonathan Nafziger

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SUMMARY

Software Developer with a Physics PhD

EDUCATION

PURDUE UNIVERSITY

PhD in Physics
May 2015 | West Lafayette, IN
Cum. GPA: 3.92 / 4.0

GOSHEN COLLEGE

BA in physics, minor in math
May 2008 | Goshen, IN
Cum. GPA: 3.82 / 4.0
Major GPA: 3.98 / 4.0

SKILLS

PROGRAMMING

Python • Django • React
TensorFlow • Keras • JAX • Flax
Numpy • Scipy • Pandas • Scrapy
Helm • Kubernetes • GCP

MATH AND PHYSICS

Quantum Mechanics • Electronic Structure
Density Functional Theory • Numerical ODEs and PDEs • Numerical Inverse Problems

SCIENCE

• Twelve peer-reviewed scientific publications
• More than 9 domestic presentations
• 4 international presentations (Ireland, Spain, Switzerland, Colombia)

RECENT PUBLICATIONS

• M Wu, J Nafziger, A Scodary, A Maas
Harpervalleybank: A domain-specific spoken dialog corpus (*arXiv:2010.13929*)
• V Chávez, J Nafziger, A Wasserman
pyCADMium: Chemical Atoms in Diatomic Molecules (*Journal of Open Source Software*)

More on Google Scholar:
http://bit.ly/2z6mDs9

WORK EXPERIENCE

GRIDSPACE

Machine Learning Data Engineer
Apr 2018 - Present | Los Angeles, CA

- Built and managed data collection platform Gridspace Mixer, where users call in and talk to a partner in a specified domain scenario.
- Built a corresponding labeling tool where transcriptionists efficiently correct errors in machine generated transcripts.
- Deployed and managed these tools using Helm, and Kubernetes on GCP.
- Managed and grew user base to over 500 active users and generated over 3,000 hours of domain specific speech recognition data.
- Designed and built dialog act and emotion recognition models
- Worked with a team of Machine Learning Engineers to build and deploy state of the art speech recognition and text to speech models.

CONGRUITY WORKS

Web Development and Support
Aug 2017 – Apr 2018 | Muncie, IN

- Provided support and development for wordpress and drupal sites using html, css, javascript and php

PHD AND POSTDOCTORAL RESEARCH

with Prof. Adam Wasserman
Jan 2011 – July 2017 | West Lafayette, IN

- Developed novel computational methods within the field of density functional theory
- Wrote MATLAB software to solve problems involving ODEs and PDEs as well as corresponding inverse problems
- Integrated new algorithms into existing FORTRAN software packages

HOBBY PROJECTS

- *Double Pendulum Visualizations* visualization of chaotic dynamics as well as a *javascript based interactive version*
- *PyWordle* solves wordle using information theory
- *SandPile* simulates the Abelian sand pile. Includes some optimization experiments with Cython and C++