Peter N. Dobbs

peterdobbs77.github.io

PROFESSIONAL EXPERIENCE

Canon Medical Informatics, Inc, Minnetonka, MN

Software Engineer — February 2022 - present

- Collaborating with Product Managers and various Stakeholders across the globe to decompose requests, define requirements, and develop roadmaps
- Share technical and medical industry knowledge with the product teams

Associate Software Engineer — May 2020 - February 2022

- Data engineering and analysis of DICOM and HL7 data
- Improving custom NiFi ingestion to Elasticsearch and Kibana visualizations

Marquette Energy Analytics, LLC, Milwaukee, WI

Product Owner, Developer, and DevOps Engineer — October 2018 - May 2020

- Product Owner and Developer of data access and visualization tools.
- Deploying regular updates for forecasting models on the cloud.
- Primary contact for licensed products at five of our customer sites.
- Culture-influencer within the startup.

GasDay Project at Marquette University, Milwaukee, WI

Graduate Research Assistant — August 2018 - May 2020

- Involved in weekly seminar discussions of papers related to lab research

Application Developer — August 2016 - October 2018

- Created an Excel Add-In in C# for data access, analysis, and visualization.
- Collected feedback from users at various companies nationwide.

Application Support Specialist — June 2015 - October 2018

- Deployed regular updates to the energy demand forecasting AI models.
- Developed automation tools that decreased deployment time by over 20%.
- Led process improvement for product testing and team exchanges.

EDUCATION

Master of Science, Mathematical, Statistical, and Computational Sciences GPA: 3.7/4
Marquette University Graduate School, Milwaukee, WI, Spring 2021

Bachelor of Science, Biomedical Engineering - Biocomputing GPA: 3.5/4
Marquette University Opus College of Engineering, Milwaukee, WI, May 2018

SPECIALTIES

Programming Languages: Python, SQL, R, Matlab, C#, Java
Data Analytics Software: Jupyter, RStudio, NiFi, Elasticsearch/Kibana
Development Concepts: Agile, CI/CD, Deon Ethical Checklist
Software Management: Git, Atlassian/Jira,
Platforms: AWS, Azure, Windows, Linux
Health Standards Experience: HL7 v2, HL7 FHIR, DICOM, IHE

PUBLICATIONS

Towards Developing an EMR in Mental Health Care for Children's Mental Health Development among the Underserved Communities in USA. 2021
Kazi Zawad Arefin, Kazi Shafiul Alam, Masud Rabbani, **Peter Dobbs**, Leah Jepson, Amy Leventhal, Amy Van Hecke and Sheikh Iqbal Ahamed
arXiv preprint arXiv:1706.06969

FEATURED TALKS

DICOM For Informaticists, Part 1
First video of a pair of recorded lectures, created as a part of the SIIM CDI Series, introducing DICOM to aspiring Clinical Data Informaticists.

DICOM For Informaticists, Part 2
Second video of a pair of recorded lectures, created as a part of the SIIM CDI Series, introducing DICOM to aspiring Clinical Data Informaticists.

Nyandwi Muzungu: Medical Device Repair in Constrained Environments
In November 2019, I was invited to give a talk as a part of the Global Innovation Seminar Series at University of Wisconsin. The event coordinators asked me to share some of my experiences from my trips to East Africa.

CERTIFICATES

A-CSPO: Advanced Certified Scrum Product Owner — 21 November 2023
Scrum Alliance

CSPO: Certified Scrum Product Owner — 6 August 2021
Scrum Alliance

QI 104: Interpreting Data — 29 October 2018
Institute for Healthcare Improvement, Boston, MA

FEATURED PROJECTS

Statistical Simulation
A series of projects written in Python, presented as Jupyter Notebooks, that display statistical analysis of various data sources. Check out the repository on GitHub to view the Jupyter Notebooks.

- `USAU Data` - project to scrape and investigate Collegiate Ultimate Frisbee data for the purposes of predicting season series outcomes.
- `Image Classification Data` - simple investigation of the CheXpert data set from Stanford.

Expectation Maximization Algorithm
The EM Algorithm is an iterative method that can be used to find model parameters. This project implemented a R shiny app that takes in data from a 1-dimensional mixture model and finds the optimal parameters to represent the distribution of that data. The final product is published to peterdobbs.shinyapps.io/em-algorithm.

Team Great Lakes - Team Lead
Led a team of students from Milwaukee and Chicago in the Society of Imaging Informatics in Medicine (SIIM) Hackathon at the 2018 and 2019 SIIM Annual Meeting. As Team Lead, I was directly involved in the requirements gathering and development of projects that won the hackathon in 2018 and placed third in 2019.

- `Forms on FHIR` (2019) - provides a UI for directly creating and editing FHIR resources for populating an AI-ready research FHIR server.
- `Follow-up of Noncritical Actionable Findings` (2019) - automated notification of primary care providers that important findings which are not critical for patient intervention at the time of the study are contained in radiology study. *This project placed 3rd at the 2019 SIIM Hackathon.*
- `Synoptic Reporting as an Enabler` (2018) - converts a synoptic (structured and coded) radiology report into a FHIR resource for storage in a FHIR server.

EMR6050: Web Solution for an Urban Mental Health Clinic
A suite of cloud-based tools to meet the technical needs of a new behavioral health clinic. All instances and data are hosted on AWS. This project is on-going as a part of my Master's thesis project.

Assessment of Public Service Accessibility in Milwaukee
Using various open data sets for Milwaukee, WI and GIS shape files, this project

qualified a relationship between adjusted gross income and calls for Emergency Medical Services (both in aggregate and in particular instances related to medical services) in different areas of Milwaukee. While investigating the topic, the deon data science ethical checklist was applied as a way to assess the implications of these findings.

EXTRA-CURRICULAR ACTIVITIES

Marquette Birdhouse - Primary D-Line Handler Fall 2016 - Spring 2020
Playing for Marquette's D1 Ultimate Frisbee team. Fostering a fun but competitive atmosphere for developing student-athletes. We have reached the regional-level tournament in each full-season I played.

Milwaukee Revival - Captain, Handler Summer 2019
Captained a summer club Ultimate team through its inaugural season. Developed positive relationships between players within the Milwaukee Ultimate Community who also play on rival college teams.

Marquette University Core Band - Drums & Percussion Fall 2014 - Spring 2017
Exceeded the required attendance by playing at over 50% of all pep-band assigned events, including pep rallies and home volleyball and basketball games. Travelled with the Marquette Basketball and Volleyball teams to perform at various post-season tournaments. My favorite moment was getting to play in Madison Square Garden.

WORLDLY EXPERIENCE

Engineering World Health

On the Ground Coordinator - SI Uganda 2018
- Instructed a cohort of students from the Duke Engage program and top Makerere University engineering students.
- Coordinated training and cultural experiences with partners in Central Uganda.

On the Ground Coordinator - SI Rwanda 2017
- Improved teaching materials for the in-country device repair and design in constrained environments course; led the daily hands-on lab section.
- Supervised and assisted the participants at hospitals throughout rural Rwanda.
- Compiled reports on sites that included an equipment inventory, equipment service report, and a final presentation of work and experiences from each of the participant groups.

Volunteer Biomedical Equiment Technician (BMET) - SI Rwanda 2016
- Four weeks of in-country learning at IPRC in Kigali, Rwanda: 4 hours per day of language/culture instruction, 4 hours per day studying medical device repair and design in constrained environments.
- Five weeks volunteering in a BMET workshop in rural Rwanda, inventorying over 340 pieces of equipment and achieving a repair success rate of 74%, the best success rate of the program.

REFERENCES

available upon request