

# Brian Matzelle

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## EDUCATION

**Binghamton University, SUNY | Thomas J. Watson College of Engineering and Applied Science**

*Bachelor of Science in Computer Science*

*Expected May 2024*

**Relevant Coursework:** Data Structures & Algorithms, Design Patterns, Design & Analysis of Algorithms, Intro to Machine Learning, Programming Languages, Java OOP, Advanced Computer Architecture

## TECHNICAL SKILLS

**Languages:** Python, Javascript, C++, HTML, CSS, SQL, Rust, C, Java, Go

**Frameworks & Software:** AWS, Temporal, Google Cloud, Node, React, NLP, spaCy, Microsoft SQL Server, React Native, Next.js, Expo, React Navigation, Git, Windows, MacOS, Linux, XGBoost, sklearn, LangChain, FAISS

## PROFESSIONAL EXPERIENCE

**Software Engineer Intern, Med-Metrix | Garden City, NY**

*June 2023 - Present*

- Eliminated overnight model training after refactoring XGBoost classification model, increasing performance by 200%
- Preprocessed proprietary language data to finetune Falcon-7b large language model (LLM) to write insurance appeals
- Improved classification model accuracy from 80% to 90% by refining data preprocessing methods to heighten efficacy of written appeals and optimizing revenue potential
- Built data extraction pipelines with Airbyte's CDK to ingest FHIR resources into S3 buckets via custom connectors, helping with database cloud migration
- Designed an LLM workflow with LangChain for accurate patient medical record retrieval, creating dedicated FAISS vector stores for each patient, and generating appeal documents
- Collaborated closely with legal experts to ensure AWS development environments remained HIPAA compliant when projects included Protected Health Information (PHI)

**Co-Founder & Software Engineer, OnePolicy, LLC | Vestal, NY**

*November 2022 - May 2023*

- Spearheaded Next.js website prototypes to validate complex technical solutions before full-scale implementation
- Demonstrated adept project management abilities through the effective use of agile methodologies, including task prioritization and meticulous project timeline monitoring, ensuring on-time delivery of high-quality website updates
- Cultivated strong project management skills by implementing agile methodologies, effectively prioritizing tasks, and closely Translated business requirements into precise React Native technical specifications, seamlessly integrating web-app functionalities and managing third-party API interactions
- Improved project execution by devising strategies, enhancing internal communication, and aligning company expectations

**Software Engineer Intern, TJ Russo Consultants | Islandia, NY**

*June 2022 - August 2022*

- Collaborated with a team of 4 developers to build an NGINX based live-streaming service to improve client outreach
- Utilized Expo library to develop client live-streaming mobile app prototype, bettering the assessment of potential solutions
- Developed email templates that contributed to a 10% increase in client engagement.
- Optimized the local infrastructure and conducted hardware upgrades, resulting in reduced technical issues and outages, safeguarding time-sensitive revenue streams

## KEY PROJECTS

**LendaHand, HackBU 2023 Submission**

*February 2023*

- Won Best Civic Engagement Hack, sponsored by J.P. Morgan, for exceptional community impact
- Awarded Best Geo Hack, sponsored by CAE, for innovative geospatial application
- Outperformed 120+ participants as team lead in 24-hour hackathon by developing cross-platform community outreach app
- Called the Google Maps API to display user event locations, enhancing user experience and event planning capabilities

**Reddit & Twitch Toxicity Data Analysis**

*August 2023 - Present*

- Teamed with 2 classmates to author analytical plan, comparing toxicity on r/LivestreamFail with corresponding Twitch clips
- Developed Dockerized data pipeline to scrape new data, judge it with external API, then store it in MongoDB database
- Implemented Temporal.io to handle workflow orchestration and scheduling, optimizing retry policies to prevent data loss
- Determined communities with the Girvan Newman algorithm and visualized findings with NetworkX knowledge graph
- Communicated all proposals and implementations effectively via LaTeX writings, surpassing project criteria

**NFL Play Predictor**

*July 2023 - Present*

- Cleaned and Preprocessed large tabular datasets using pandas, categorizing data and optimizing it for machine learning
- Achieved 66% accuracy of drive outcome based on real play by play statistics with XGBoost classification model
- Analyzed the model with sci-kit learn (sklearn), allowing for substantial accuracy improvements after each code refactor