Mahir Sowad

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U.S. Citizen

EDUCATION

Worcester Polytechnic Institute (WPI)   Worcester, MA
Bachelor / Master of Science in Computer Science (Concurrent)   *Aug 2021 – May 2025*
- 3.87/4.0 GPA, 4x Dean's List, WPI Presidential Scholarship
- **Relevant Coursework**: Deep and Machine Learning, Artificial Intelligence (AI), Big Data Management and Analytics, Algorithms, Operating Systems, Database Systems I, Human-Computer Interaction, Cryptography and Communication Security, Data Visualization

EXPERIENCE

Frontend Developer (Internship)   May 2024 – Aug 2024
ProsperOn   *Boston, MA (Remote)*
- Developed and enhanced React.js components using JavaScript, TypeScript, and Material UI, streamlining financial literacy education for hundreds of college students
- Refactored existing components and implemented responsive web design techniques, improving mobile accessibility and expanding the platform's reach by 58.21%
- Implemented Axios REST API calls to consolidate users' checking, savings, and emergency fund data into a unified platform, reducing the time spent accessing separate accounts by 50%

AI & Machine Learning Research Assistant (Internship)   May 2023 – December 2023
ASSISTments   *Worcester, MA (Remote)*
- Analyzed over 80,000 student math work images from an online learning platform (ASSISTments) using unsupervised clustering techniques and vector embeddings generated by OpenAI's CLIP model for image similarity assessments to find common student answer trends that can assist instructors refine their math lessons
- Developed a JavaScript (Vue.js) cropping feature to eliminate irrelevant background and Personally Identifiable Information (PII) from student math work images, improving data privacy and relevance by roughly 20% to yield more accurate results during further ML analysis on the dataset
- Utilized GPT-4 for few-shot learning and image analysis of over 100 math diagrams and graphs, assessing the feasibility of evaluating student responses with large language models

Web Developer and Website Manager (Internship)   Dec 2022 – Jul 2023
Resilience, Inc.   *Tampa, FL (Remote)*
- Managed and optimized social-emotion learning (SEL) content for two company websites using WordPress and PHP, creating custom HTML/CSS solutions to modify default plugin behavior to enhance user experience and streamline delivery of K-12 educational SEL content to over 29 U.S. states and 10 countries across 4 continents

AI Project Research Assistant (Part-time)   Feb 2023 – May 2023
WPI Learning Sciences and Technologies Lab   *Worcester, MA*
- Labeled over 3,000 math work images uploaded by over 20,000 active students to an online learning platform (ASSISTments) for Personally Identifiable Information (PII), enabling the release of a PII-free dataset to researchers, supporting the development of bias-reduced machine learning models

PROJECTS

Brigham and Women's Hospital Application (tinyurl.com/ms-bwh-app)   Mar 2023 – May 2023
- Implemented patient-staff communication service requests, service request viewer cards, two-factor authentication, and resolved complex merge conflicts to boost patient-staff communication speed by roughly 40%
- Built a two-tier full-stack hospital management app in Java (JavaFX, MaterialFX) and PostgreSQL with 9 teammates, using Scrum and Agile methodologies to improve team workflow efficiency by 80%

TECHNICAL SKILLS

Languages: Python, Java, C/C++, JavaScript, TypeScript, HTML/CSS, SQL (Postgres, Oracle, MySQL), R, Scala
Libraries/Frameworks: PyTorch, TensorFlow, NumPy, Matplotlib, Seaborn, Pandas, Scikit-Learn, Pillow, Flask, JavaFX, React.js, Vue.js, Node.js, Express.js, MongoDB, Android SDK, Hadoop, Spark, Apache Pig
Tools and Technologies: Jira, Trello, Git, Docker