Mikolaj Marciniak

Full Stack Developer | CS Graduate | MERN Stack
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github | linkedin | portfolio

Summary

Versatile Full Stack Developer with three years of experience in constructing web-based solutions for corporate and individual clients. Specialises in the MERN tech stack and excels at integrating bespoke interfaces with Java, AWS, and Python backends. Academic background includes skills in machine learning and artificial intelligence. Eager to contribute to a diverse team in a Full Stack developer position.

Education

Bachelor of Science - Computing Science (2:1) **Sep 2020 - June 2024**

University of Aberdeen *Aberdeen, UK*

Skills

Languages	Python | TypeScript | JavaScript | PHP | SQL | Java
Frontend	React.js | Angular | Redux | Next.js | Tailwind CSS | SCSS
Backend	Node.js | Express.js | Flask | Spring Boot | MongoDB | RESTful APIs | Authentication (OAuth, JWT)
DevOps	GitHub Actions | Jenkins | Docker | Kubernetes | Maven | Testing (E2E, unit, integration) | TDD | BDD
AWS	S3 | EC2 | CI/CD pipeline | Lambda | API Gateway | DynamoDB | Cloudfront CDN | IAM
Other	Git | ETL | Agile (XP and Scrum) | LaTeX | Jest

Experience

Full Stack Web Developer **Aug 2024 - Present**

Freelance *Leeds, UK*

- Prepared a progressive web application (PWA) for a plumbing business in Leeds.
- Launched an MVP with payment integration, invoice generator, contact form with mailing system, and gallery.
- Designed the app in Figma with a focus on great user experience on mobile platforms.
- Created a Jenkins pipeline to automate the build, testing and deployment process, reducing the time between releases by 60%.

Tech Demonstrator **Sep 2023 - Jun 2024**

University of Aberdeen *Aberdeen, UK*

- Taught 30 students in practical classes across two courses, web development (HTML, CSS, JavaScript, Node, Git) and databases (SQL, data warehousing, ERD modeling, spatial databases).
- Guided students through course assessments. From building distributed web applications with React and Express to designing and implementing complex SQL database models for incomplete requirements.

WordPress Webmaster **May 2020 - Jun 2021**

Simplytalking - Edyta Zieba sp. z o.o. *Poznan, PL*

- Improved and maintained a WordPress website (simplytalking.pl) for an English language school.
- Restored site from backups, reducing downtime during major updates from an average of one day per month to approximately three hours per month.
- Accessed and aggregated customer reviews from Google Places API, displaying testimonials on the front page, enhancing client credibility.
- Achieved a 27% month-over-month increase in traffic through SEO strategies, reported by Google Analytics.

Junior React Developer **Mar 2019 - Oct 2020**

Premiumfaber ltd. *Liverpool, UK*

- Developed and maintained a serverless SPA website (extra-english.pl) using React and Redux for frontend and AWS cloud services for backend functionality.
- Collaborated in a team, applying Scrum and TDD methodologies using Jest for unit and component testing.
- Implemented a timetable component using DynamoDB, resulting in a savings of approximately £200 per month in operational costs by eliminating manual updates.
- Automated the signup process for new customers via an online form. This simplified paperwork and allowed the client to gather over 70 email addresses for targeted marketing.
- Increased local website reach by an average of 393 views and 38 visits per month (during 2020).

Notable Projects

Productivity Manager
Jul 2024 - Present

TaskTamer *Leeds, UK*

Authored a bug-tracking and project management tool, inspired by Jira. TaskTamer, allowing users to monitor progress across projects, and teams. Through the platform users can create, read, update and delete tickets, which represent tasks or bugs for a given project.

- Connected to a DynamoDB database via an HTTP API made using AWS API Gateway, permitting data persistence between sessions.
- Produced a user account system with secure OAuth 2.0 authentication.
- Built a notification system using AWS SES and Lambda, alerting users when a task or project is due soon.
- Devised advanced sorting and filtering options, which help users manage larger projects.
- Launched the demo and other projects on marciniakm.com/projects.

Framework for Analysis of Attribute Inference Attacks
Feb 2024 - May 2024

Honours Project *Aberdeen, UK*

Created a framework for measuring data leakage, and exploring differential privacy techniques to evaluate and mitigate vulnerabilities in online machine learning models. Engineered the framework as a modular tool to quickly compare blackbox and whitebox attribute inference attacks across varied scenarios. Investigated attribute inference attacks, where adversaries use a public dataset and machine learning model to predict sensitive information not included in the training set.

- Customised target models with Python Keras library, including a range of options for evaluators, loss functions, and optimisers.
- Implemented the framework as an annotated Jupyter notebook file, making it easy to use by launching the notebook and pressing one button.
- Evaluated models using metrics such as entropy, mutual information, F1 score, precision, recall, and accuracy.
- Provided two types of differential privacy defence mechanisms are available, Laplacian noise and the exponential mechanism.

Black Box Telematics Car Insurance Tracker
Oct 2022 - Apr 2023

DriveGuage *Aberdeen, UK*

Developed a proof of concept for a startup. DriveGuage monitors car driver performance in real time, running on a raspberry PI and connecting to the car's OBD port. This data is uploaded to a server, then processed and presented through a web platform. The web app lets clients observe changes in 'driver score' over time - a compound measure of driving performance.

- Set up a containerised architecture using Docker Compose for scalability and maintainability.
- Built a user authentication system with Authelia, allowing the retrieval of data for authorised drivers.
- Input OBD data into a PostgreSQL database through the box ingest service, which deserialized the protobufs.
- Engineered a Python microservice that extracted driving behaviors, such as fast acceleration, speeding, and sharp turns. A driver score for each session was calculated based on the frequency of these events, with a maximum score of 1000. The average driver score across all sessions was then adjusted.
- Fetched requested data for authenticated users and presented it as a line graph of driver scores, along with tables of sessions and incidents, incorporating sorting, pagination, and filtering functions.
- Composed comprehensive unit and integration testing using the JavaScript Jest library.

Achievements and Certifications

Author of the 'react-dynamic-spotlight' node package

Published open source react hook for controlling a spotlight element which follows the cursor.

Committee Member of Aberdeen University AI society

Organised university-wide hackathon; grew membership of the Artificial Intelligence Society by 53% year-on-year.

The Complete Web Developer 3.0 Course

Mastered a range of good practices and concepts critical for modern web development, expanding skills in HTML, CSS, JavaScript, PHP, Python, and MySQL.

Principles and Practices of Great UI Design Course

Completed a course covering a broad range of essential UI/UX design principles, including accessibility, color theory, typography, and data visualization.