

# Oliver Grudzinski

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## SUMMARY

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B.S. Computer Science Junior at MSOE with hands-on experience in AI/ML, data analysis, and full-stack development. Built scalable web and AI systems during an internship at TESCHGlobal. Active member of MSOE AI Club and Society of Software Engineers, dedicating 8+ hours/week to projects. Eagle Scout with a strong record of leadership. Key skills: Python, Java, LLMs, full-stack development, React, TypeScript, Node.js, and CI/CD pipelines.

## EDUCATION

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**B.S. Computer Science** | Milwaukee School of Engineering | GPA: 3.19 | Expected May 2027

## INTERNSHIP EXPERIENCE

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**Full Stack Software Development Intern** | TESCHGlobal | Grafton, WI | June 2025 – Present

**Automated XML Schema Documentation Pipeline:** Engineered an autonomous CI/CD pipeline to analyze, compare, and document XSD changes via Python and Machine Learning.

- Built core inference engine for the RAG pipeline, translating raw XML node differences into structured JSON representing architectural changes.
- Implemented generative AI component with grounding, using an LLM to convert JSON data into technical analyses of schema changes.
- Deployed workflow via GitHub Actions, reducing XML documentation time by 95%, cutting a 4-hour manual process to 5 minutes.

**Healthcare Web Application Development & FHIR Integration**

- Developed clinical SPA features using React, TypeScript, and HL7 FHIR REST APIs.
- Enhanced Node.js BFF APIs supporting legacy Angular components.
- Increased unit test coverage across React and Angular modules for improved reliability.
- Collaborated in sprint cycles and daily standups as part of an Agile (Scrum) development team.

**Inventory Systems Management Intern** | Wisconsin Stamping & Manf. | June 2021 – June 2025

- Authored SQL queries analyzing historical inventory to identify slow-moving stock and optimize ordering.
- Performed daily cycle counts, reconciled ERP discrepancies, and tracked stock trends.
- Maintained 99%+ inventory accuracy, supporting efficient production and supply chain operations.
- Collaborated with operations and warehouse teams to implement process improvements, enhancing overall workflow reliability.

## PROJECT EXPERIENCE

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**First Place - Juno Hackathon, CPA Agentic Research System (Team of 3):** Built LLM-driven deep research assistant for tax analysis using Python, LangChain, PydanticAI, which cut CPA research time by 80%.

- Developed PDF ingestion pipeline with PyMuPDF, extracting text/images and encoding multimodal payloads for richer LLM context.
- Created LangGraph state-machine workflows to break complex tax-law queries into subtasks, running asynchronously to accelerate research by 95% and resolve 3–5 hour queries in 4 minutes.
- Implemented iterative agent loop to generate section reports, flag missed credits, and produce actionable tax-saving recommendations.
- Collaborated closely with a 3-person team to design, test, and deploy the system under strict hackathon deadlines, earning first-place recognition.

## Diabetes Prediction Using Random Forest

- Performed Kruskal-Wallis tests with Bonferroni correction to identify statistically significant predictors and retained Glucose, Age, and Pregnancies as key variables.
- Trained and optimized Random Forest Classifier with hyperparameter tuning, achieving 90.49% accuracy and 0.8202 F1 score using greedy feature selection.
- Demonstrated that minimal clinical inputs can effectively predict diabetes outcomes, and outlined next steps including comparative models and SHAP-based interpretability.

**Campaign Management System:** Built full-stack web application with React, Node.js, Express.js, MariaDB, and role-based access control for multi-tenant architecture.

- Developed responsive React SPA with Vite, Tailwind CSS, custom hooks, Context API state management, and lazy loading, achieving 95+ performance scores on mobile-first design.
- Architected Node.js/Express REST API with JWT authentication, bcrypt encryption, Knex.js ORM, file upload middleware, and 15+ permission types via RBAC.
- Designed normalized MariaDB schema with 8 tables, foreign keys, automated migrations, indexing, and transactions with sub-100ms query times.
- Implemented ESLint, automated testing, Docker containerization, CI/CD pipelines, environment configuration, and security best practices including XSS/SQL injection prevention.

**Modern React Single Page Application:** Built personal portfolio website with React, React Router DOM, and Vite for fast, reliable production.

- Implemented TailwindCSS with custom CSS animations to create an immersive, visually engaging website.
- Developed a dynamic navbar with moving highlight bubbles, theme toggle, responsive mobile menu, and project filtering to enhance user interaction.
- Hosted on AWS; showcased professional projects at [olivergrudzinski.com](https://olivergrudzinski.com)!

## TECHNICAL SKILLS

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**Programming Languages:** Python, Java, C++, TypeScript, JavaScript, SQL

**Web Development:** React, Node.js, HTML, CSS, JavaFX, Vite, TailwindCSS, Redux, AWS

**AI/ML:** Scikit-learn, Pandas, NumPy, TensorFlow, LangChain, LangGraph, LLMs, Generative AI, RAG

**Databases & Tools:** Git, GitHub, GitHub Actions (CI/CD), MongoDB, SQL, Jupyter Notebooks, VSCode

**Development Methodologies:** Agile (Scrum), Waterfall

## CO-CURRICULAR INVOLVEMENT | COMMUNITY SERVICE

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**Eagle Scout** | Scouts of America | 2015 – 2022

**Researcher** | MSOE AI Club (MAIC) | Sep 2023 – Present | 6 hrs per wk

**Member** | Society of Software Engineers | 2024 – Present | 2 hrs per wk

**Athlete** | Intramural Volleyball | 2025 – Present | 2 hrs per wk