

# Clement A. Kubica

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## EDUCATION

**Northwestern University | Weinberg College of Arts & Sciences**

**Evanston, IL**

*Master of Science in Computer Science | GPA: 4.0/4.0*

*Expected December 2026*

*Bachelor of Arts in Computer Science & Data Science*

*September 2021 – August 2025*

- Big Ten Conference Division I Swimmer | Dean's List | Relevant Coursework: Data Structures & Algorithms, Design & Analysis of Algorithms, Networking, Operating Systems, Databases, Deep Learning, Machine Learning, Agile Methodologies, Computer Systems, SQL, ML

## Technical Skills

*Languages: Python, Java, JavaScript, TypeScript, HTML, CSS, SQL, C++, C#, C*

*Technologies/Frameworks: AWS (Lambda, RDS, S3, API Gateway, EC2), Docker, Git, .NET, ReactJS, Tailwind, Express*

*Testing Libraries and Frameworks: Junit, EasyMock, Vitest, Jacoco, PITest, Cucumber*

## PROFESSIONAL EXPERIENCE

**Center for Regenerative Nanomedicine – Stupp Laboratory**

**Evanston, IL**

*Undergraduate Researcher & TeamNMR Manager*

*June 2024 – March 2025*

*Skills: Python, TensorFlow, NMRPipe, NMRViewJ, Pandas, Signal Processing, Data Curation, Deep Learning, Neural Networks*

- Directed TeamNMR operations, overseeing **dataset reorganization** and scheduling for 5+ researchers across collaborative NMR projects, **improving data accessibility and meeting efficiency**.
- Built **neural network pipelines** to automate signal assignment in complex multidimensional NMR spectra of peptide amphiphiles (PAs), accelerating manual workflows by an estimated **60%**.
- **Designed preprocessing workflows** for spectral normalization, artifact correction, and peak picking using domain-specific tools (NMRPipe, TopSpin), reducing data cleaning time by **30%**.
- Benchmarked **deep learning** tools including DEEP Picker, NMRFAM-SPARKY, and ARTINA, **evaluating prediction accuracy** for chemical shift assignments and 3D structure inference.

**Party Rental LLC**

**Chicago, IL**

*Software Developer Intern*

*March 2023 – July 2023*

*Skills: HTML, CSS, JavaScript, UI/UX Design, Web Accessibility*

- Audited and evaluated legacy website architecture to identify UX bottlenecks and inefficiencies in the customer flow
- Designed and implemented a responsive, user-friendly interface to optimize navigation and improve customer engagement
- Applied modern web standards to enhance accessibility, streamline layout structure, and reduce page load time

## Projects

**Formula 1 Podium Prediction**

**Evanston, IL**

*Skills: Python, Scikit-learn, TensorFlow, Pandas, NumPy*

*September 2023 – December 2023*

- Developed an end-to-end **ML pipeline** to predict driver placements using enriched F1 race data spanning 20+ years
- Engineered domain-specific features (e.g., adjusted lap times, circuit-normalized metrics), handled DNF/DNS cases, and performed data normalization.
- Trained and evaluated **Decision Trees** and **feedforward neural networks (TensorFlow)** for **multi-class classification** of race results

**FurnitureFlow – Campus Furniture Exchange Platform**

**Evanston, IL**

*Skills: React JS, Vite, Firebase Auth, Firestore, Google Maps API, Material UI*

*January 2025 – March 2025*

- Led a team of 6 to develop a full-stack marketplace app for Northwestern students to buy and sell used furniture, using **React** and **Firebase** with real-time listings and messaging while following **agile methodologies**
- Integrated **Google Maps API** for location-based item filtering and interactive map view
- Implemented **Firebase Auth** and **Firestore** for secure user management and dynamic item data storage
- Designed responsive UI using React and Material UI for mobile and desktop compatibility

**Juno - AI Marketing Assistant**

**Evanston, IL**

*Skills: React JS, Vite, Firebase Auth, Firestore, Gemini API, Google Maps API, GitHub Actions*

*January 2025 – March 2025*

- Led a team to develop Juno, a full-stack AI tool that generates localized marketing campaigns and flyers using **Gemini LLM** and event data
- Engineered prompt-based content generation via **Gemini API**; integrated **Google Maps API** for event-aware recommendations
- Implemented **Firebase Auth** and **Firestore** for session management and data persistence
- Developed modular **React** components, optimized **API interactions**, and configured **GitHub Actions** for CI/CD

## LEADERSHIP, HONORS & ACTIVITIES

- **Best Computer Scientist Award - 2020, Millfield School, Great Britain | Silver Medalist, Mathematics Olympiad - 2019, Great Britain | Top 5% National Finalist, Bebras Computing Competition - 2019, Great Britain**
- **Swim Captain - 2019, Millfield School | NCAA Division I Athlete - Northwestern University**
- **French Swimming National Champion (3×) – 2020, France | British National Champion – 2019, Great Britain**
- Internationally educated in **France, UK, and USA** with bilingual fluency in French and English