Neal Kaushik Sharma

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EDUCATION

Iowa State University, College of Liberal Arts and Sciences **Ames, Iowa**
Bachelor of Science in Computer Science (Honors Program), Minor in Artificial Intelligence **Sophomore, Class of 2028**

GPA: 3.8 | Dean's List for Academic Excellence

Relevant Coursework: Data Structures and Algorithms, Software Development Practices**,** Object Oriented Programming, Discrete Computational Structures, and Web Development and Design.

Clubs: ISU AI and ML Club, ISU Web Development Club, ISU Hackathon Club, and ISU CSE Club.

COMPUTATIONAL SKILLS

Java, Python, C#, SQL, .NET, Git, HTML, CSS, JavaScript, Spring Boot, Postman, SSH, LaTeX, and Linux.

WORK EXPERIENCE

Software Engineer Intern **June 2025 – August 2025**
Tata Consultancy Services

- Worked as a Web Application Developer, developing and maintaining full-stack web applications and databases.
- Developed a full-stack Online Retail Management System using C#, ASP.NET Core MVC, SQL Server, and AJAX, including secure authentication, role-based access control, dynamic product listings, shopping cart, and checkout flow, streamlining business operations and enhancing client-facing digital infrastructure.
- Gained hands-on experience with Azure cloud services, including Function Apps, Data Factory, Pipelines, and Key Vaults, and contributed to user stories for larger team projects, enhancing both development and cloud deployment skills.

RESEARCH EXPERIENCE

Malicious Unlearning Attacks against Predictive Uncertainty in AI Models **August 2025 - Present**
Department of Computer Science, Iowa State University

- Conducting research on vulnerabilities in predictive uncertainty during the machine unlearning process, with a focus on safety-critical applications such as healthcare and autonomous driving.
- Contributing to model training, implementation of unlearning techniques, and exploration of uncertainty quantification methods to study how predictive confidence can be manipulated.
- Reviewing and analyzing existing methods in machine unlearning and uncertainty quantification (post-hoc and model-based approaches) to identify potential attack surfaces.

The Search for Out Bursting White Dwarfs and Their Detection Methods **March 2025 - April 2025**
Department of Physics and Astronomy, Iowa State University

- Volunteered as a research assistant in a study focused on identifying out-bursting white dwarf stars using data from NASA's TESS mission.
- Interpreted data visualizations such as HR diagrams and brightness plots to classify star behavior.
- Documented findings and collaborated with peers in maintaining a catalog of analyzed targets.

PROJECTS

Online Retail Management System **June 2025 - Present**
A full-stack e-commerce web application for managing online retail operations

- Demonstrated as *BrewMaster*, a simulated coffee retail store, this domain-independent solution can manage products, users, and orders, and is adaptable to any retail sector. For an in-depth look at the project, please visit the GitHub repository.
- Developed platform features for both users and admins, including secure authentication, role-based access, dynamic product listings, shopping cart and checkout flows, admin dashboards with searchable tables, image uploads, audit trails, and real-time SQL Server integration.
- Implemented a full-stack architecture following the MVC design pattern using C#, ASP.NET Core MVC, ADO.NET, SQL Server, and jQuery, with AJAX-powered dynamic updates, SHA256+salt password hashing, responsive UI, and centralized logging.

Network Attached Storage (NAS) **August 2025 - Present**
Personal NAS and server on Raspberry Pi 5 with automated backups, SSH-based remote access, and secure networking.

- Set up OpenMediaVault on Debian Linux to manage storage and provide shared network folders accessible from Windows PCs.
- Wrote automation scripts for daily PC and remote server backups, including Wake-on-LAN triggers and backup rotation.
- Set up OpenVPN and lightweight web hosting alongside Docker-based services for secure access and remote administration.