**Bernhard Nordemann**

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**Education**

**Worcester Polytechnic Institute (WPI) Worcester, MA**

**Master of Science** in Computer Science May 2024

**Bachelor of Science** in Computer Science, **Minor** in Electrical and Computer Engineering May 2024

GPA: 4.0/4.0 (Dean’s List for 6 Semesters)

**Relevant Coursework:** Software Engineering, Design of Software Systems, Deep Learning, Machine Learning, Algorithms, Distributed Computing Systems, Object-Oriented Design Concepts, Database Systems, Computer Networks, Operating Systems

**Experience**

**Chewy**, *Software Engineer Intern* June 2023 – August 2023

* Developed a web application to proactively identify internal orders related issues over 30 million orders monthly, saving the company an estimated $162,000 monthly using AWS, Terraform, Apache Kafka, Spring Boot, and Node.js
* Processed data from Amazon SNS into Amazon SQS and Kafka queues, then into Elasticsearch indices in Java backend
* Stored pre-processed data in Elasticsearch database, enabling redrive of missing or incorrect data, ensuring metric accuracy
* Reduced build time by 40% by parallelizing Gradle build and isolating integration testing, saving engineers time
* Integrated Datadog trace tracking and configured health monitoring and alerts for service CPU, memory, and latency
* Practiced continuous integration/continuous delivery and deployment (CI/CD), using Jenkins for weekly releases

**Dell Technologies**,*Software Engineer Intern*June 2022 – August 2022

* Developed an Oracle Enterprise Manager Plugin using Enterprise JavaScript (Oracle JET) and Java
* Streamlined hardware information access, increasing the productivity of database admins in over 1,400 companies
* Collected hardware metrics from SQL views and REST API calls to display in a JavaScript frontend
* Exercised Agile practices with Jira tracking tools to collaborate on a globally dispersed team across a 9-hour time difference

**Norquest Capital**,*Software Engineer* *Intern*  June 2020 – August 2021

* Devised a futures trading algorithm using Python with a Tkinter interface to optimize and test trading strategies
* Backtested strategies in Python using pandas to determine risk and returns over 15-year period and created relevant visuals
* Automated the updating of an equities database used to keep track of stocks and commodities using Python scripts

**Projects**

**Blockchain Feasibility Assessment in Collaboration with STC Hong Kong [[Publication Link](https://digitalwpi.wpi.edu/concern/student_works/cn69m767g?locale=en)]** January 2023 – March 2023

* Investigated a blockchain solution to publicly store product certification data for Hong Kong Standards and Testing Center
* Conducted interviews with employees from Verizon, DigiKerma, HerBChain, and STC to determine solution feasibility
* Communicated with project sponsor to determine desired implementation specifications and project deliverables

**Custom Programming Language [[GitHub Link](https://github.com/bhnord/CS4533)]** October 2022

* Developed a recursive programming language from scratch in C++ with a custom grammar and structure
* Implemented grammar, lexical, and syntactic analysis to extract meaningful input and detect syntax errors
* Performed semantic analysis and code generation using LLVM to produce a runnable x86-64 (assembly) executable file

**Hospital Application in Collaboration with Brigham and Women’s Hospital [[GitHub Link](https://github.com/bhnord/Team-N-Project)]** March 2021

* Leveraged Agile development principles to develop medical equipment tracking and workflow application on 10-person team
* Implemented pathfinding, map builder, COVID-screening survey, and service requests using Java and SQL
* Queried and constructed application database using Apache Derby, SQL and Java to provide persistent application memory

**Skills**

**Programming Languages:** Python, Java, C, C++, JavaScript, TypeScript, HTML/CSS, SQL, x86-64 Assembly

**Cloud and DevOps:** Git, Gradle, Amazon ECS, Terraform, Docker, Amazon SQS, Amazon SNS, LocalStack

**Software Development:** Spring Boot, Elasticsearch, Apache Kafka, Node.js, React.js, Next.js, WebGL

**Activities**

**Secretary,** Society of Asian Scientists and Engineers, WPI

**Member,** Cooking Club, Tennis Club, Computer and Technology Club, Cybersecurity Club, Science Fiction Society

**Volunteer,** Southeast Asian Coalition of Central Massachusetts (SEACMA)