

# CAVIN COLE

*Designs and implements tools for automated deployment; resolves issues in production instances; enables continuous integration.*

**Software Development & Engineering ♦ Python Object-Oriented Programming ♦ Designing & Implementing Software Solutions**

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Python Programming/Scripting  
Process Automation & Optimization  
Troubleshooting & Debugging Issues

Cross-Functional Collaboration  
Technical Documentation  
Customer Service Management

Python, C, C++, C#, R  
Java, MATLAB, X++, ERP  
Best Practices & Compliance

## TECHNICAL SKILLS

**Web Design:** HTML, CSS, JavaScript, Bootstrap, jQuery, AngularJS, NodeJS  
**Databases:** Microsoft SQL Server, MySQL, Postgres SQL  
**Tools:** MS Visual Studio, Python IDE's, Adobe Dreamweaver, Eclipse, Tableau  
**Platforms:** Windows, Linux (Ubuntu)  
**Certifications:** The Complete Web Development Bootcamp, The Complete SQL Bootcamp, Intermediate Python for Data Science, MS Dynamics AX 2012 R3 CU8 Development Introduction

## EDUCATION

### MS in Computer Science, Indiana University Bloomington

Expected May 2024

Courses: Algorithm Design, Artificial Intelligence, Advanced Operating Systems, Advanced Database Concepts

- ♦ **Strassen's Matrix Multiplication Algorithm:** Carried out extensive Python coding and implemented Strassen's multiplication algorithm to compare its time and complexity with naïve; identified Strassen's multiplication provided efficient time analysis.
- ♦ **Analyzing User Reviews on Yelp:** Analyze seasonal and cultural trends on the Yelp dataset; performed sentiment analysis on user reviews using AFINN word list and Liu Bing's lexicon method; converted JSON dataset into CSV file for analysis.
- ♦ Predicted ratings of reviews on a set of review texts using frequency-inverse, documented frequency matrix, and achieved 66% accuracy using support vector machine classifier. Visualized complex dataset using Python libraries and Tableau.
- ♦ **Social Media Non-Usage:** Performed sentiment analysis using Python to identify factors leading to Facebook abandonment; scraped 13-years data from a tech-savvy site using BeautifulSoup and automated data transfer to a Postgres SQL database.
- ♦ **Kernel Programming in Xinu OS:** Designed and developed system calls and methods to implement synchronization using semaphores and futures in C++; implemented an in-memory file system for Xinu OS and allowed processes to run concurrently.
- ♦ **Artificial Intelligence:** Utilized A\* algorithm and Python programming to identify the shortest route from one place to another; carried out a 15puzzle game simulation, N-Queens puzzle, prisoners' dilemma, and implemented MDP planning algorithm.
- ♦ **Website Development:** Built a responsive website for the Bloomington Cricket Club to maintain memberships and track match details. Used HTML 5, bootstrap, Angular JS for the front-end, and PostgreSQL and Node JS for the backend.

### BS in Electronics & Telecommunication Engineering, University of Mumbai

2020

Courses: Computer Programming I, Computer Programming II, Image Processing

- ♦ **H.264 Video Error Concealment:** Implemented a spatiotemporal boundary matching algorithm using the Visual Studio IDE and C++ programming to hide errors distorting the video signal during transmission over digital links. Found outer boundary matching algorithm to be more accurate than boundary matching algorithm by comparing performances.

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## PROFESSIONAL EXPERIENCE

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### **Associate Instructor, Indiana University Bloomington**

01/2018 - Present

Assisted the instructor in preparing course content for the course Data Science On-Ramp entailing Introduction to C++, Introduction to SQL, Basics of Java, Linear Algebra, and Web Scraping. Responded to post-discussion questions and prepared quizzes and answered student queries.

### **Assistant Manager, Godrej Infotech Ltd.**

01/2014 – 06/2016

Designed customized software solutions for several clients at this ERP company providing IT solutions to engineering and service areas.

- ◆ Designed an in-house scalable payroll product from scratch based on client's country-specific regulations to facilitate streamlining and automation of the payment process; carried out thorough testing to fix bugs. The product achieved Microsoft Certification.
- ◆ Contributed to a technical white paper describing the upgraded aspects of the payroll product for clients' reference.
- ◆ Saved thousands of labor hours by automating information entry of 400 thousand employees into an HR model for a client company; developed a code to read information from an Excel file.
- ◆ Designed functionalities and SSRS reports on trial balances, monthly timesheets, and invoices for projects using MS Dynamics AX. Trained offshore clients on using the ERP solution for workflow development and assignment of security rights.
- ◆ Developed an integration-based model for a client to automate processes like vendor, customer, invoice, and journal creation.