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PROFILE

Detail-oriented and versatile Computer Science (Software Engineering) graduate with a strong foundation in full-stack development, modular system architecture, and secure software design. Proficient in Java, Python, C++, and SQL, with hands-on experience building simulations, automation tools, and data-driven web applications. Demonstrates a proven ability to work across backend and frontend technologies, apply object-oriented and functional paradigms, and model real-world systems effectively. Familiar with IoT, SCADA, and database optimization, and continuously expanding expertise in AI-driven problem-solving, data analysis, and scalable system design. A collaborative team player with a proactive mindset, strong version control habits, and an analytical approach to solving complex software challenges in dynamic, cross-functional environments focused on innovation, software quality, and scalable digital solutions.

BSc (Hons) Computer Science (Software Engineering)

University of Hertfordshire | Sept 2022 – Present | Predicted: First Class

Relevant Modules:

Software Quality, Information Security Management, Software Engineering Project, Algorithms & Data Structures, Advanced Programming Paradigms, Artificial Intelligence.

TECHNICAL & APPLIED PROJECTS

- **Hospital Management System:** Built a full-stack web application using PHP, MySQL, and Bootstrap to streamline hospital operations, including patient records, inventory, and financial reporting. Implemented role-based access control and optimized SQL queries to improve performance and data integrity. Delivered a responsive, WCAG-compliant UI to ensure accessibility across devices.
- **CARE Tournament System:** Co-developed a modular Java simulation system in an agile team environment using Java Swing for UI and OOP principles. Backend logic included inheritance, polymorphism, and MVC structure. Integrated unit testing (JUnit) and Git version control to support continuous development and collaboration.
- **Depot Parcel Processing System – Java MVC Project:** Independently created a logistics simulation using Java Swing and MVC design, featuring customer queuing, real-time fee calculation, and dynamic UI updates. Applied the Singleton pattern for efficient logging and simulated back-office parcel workflows to support automation strategies.
- **Bicycle Rental System – C++ Coursework Project:** Developed an OOP-based rental scheduling system with class hierarchies for multiple bike types. Implemented file I/O, scheduling logic, and reporting features. Automated builds with Makefile and validated logic using Catch2 unit tests. Produced developer documentation with Doxygen.
- **AP Finance – Office Network Design & Linux Configuration:** Designed a secure dual-office network using Cisco Packet Tracer with VLANs, WAN links, and access controls. Installed and configured Ubuntu VMs via VMware, performed system administration using Linux CLI, and analyzed performance with tools like Wireshark and iperf.
- **Hatfield Hotel – Advanced SQL Project:** Engineered a hotel management database using PL/SQL with stored procedures, triggers, exception handling, and dynamic views. Built backend logic for real-time discounts, booking tracking, and guest status updates.
- **AI Gridworld Agent –** Developed reinforcement learning agents in a grid-based simulation to model intelligent decision-making under uncertainty—relevant to predictive control strategies used in energy flexibility systems. Applied exploration vs. exploitation techniques to optimise agent behaviour, improve adaptability to dynamic environments, and simulate reward-maximising logic under changing conditions.

Technical Skills & Toolset

Programming Languages & Development:

Java, Python, C++, PHP, SQL, PL/SQL, HTML, CSS, JavaScript, Object-Oriented Programming (OOP), Functional Programming, MVC Architecture, Modular Design, Git, Agile (Scrum), Makefile.

Algorithms, Problem-Solving & Testing:

Data Structures, Algorithm Design, Computational Complexity, Test-Driven Development (TDD), Unit Testing (JUnit, Catch2), Functional Testing, Usability & Accessibility Testing (WCAG 2.1), Debugging, Javadoc, Doxygen, basic time-series data handling in Python (NumPy, Pandas).

Backend & Database Systems:

MySQL, Oracle SQL Developer, PL/SQL, Database Design, Stored Procedures, Triggers, SQL Optimization, Role-Based Access Control (RBAC), RESTful APIs, File I/O.

Systems Architecture & Security:

Distributed Systems, 3-Tier Architecture, UML Modelling, Secure Coding Practices, Input Validation, Authentication Mechanisms, Cyber Essentials Compliance.

Tools, Frameworks & Platforms:

Java Swing, Bootstrap, IntelliJ IDEA, XAMPP, phpMyAdmin, Cisco Packet Tracer, Linux CLI, Visual Studio Code (VS Code), Doxygen, GitHub, Bitbucket.

Professional & Interpersonal Skills:

Agile Team Collaboration, Version Control, Cross-Functional Communication, Independent Problem-Solving, Project Coordination, Business Process Awareness, Commercial Awareness.

Independent Learning:

Explored IoT systems and control system simulation; studied AI/ML techniques for predictive maintenance, time-series analysis, and cloud storage fundamentals. Gained introductory knowledge of ReactJS, Next.js, OPC/Modbus protocols, energy flexibility modelling, industrial automation, and image processing (e.g., Canny cameras).

WORK EXPERIENCE

Student Engagement Roles| University of Hertfordshire

Jan 2023 to Present

Represented the university at outreach events and open days to promote STEM education and university programs. Developed skills in stakeholder engagement, academic marketing, and strategic communication aligned with institutional goals. Acted as a tech ambassador for the School of Physics, Engineering & Computer Science (PECS), engaging with prospective students and industry guests.

Front of House Team Member | LAUREL HOUSE

May 2023 to July 2023

Provided front-line customer service in a high-paced hospitality setting. Strengthened multitasking, interpersonal communication, and organizational skills while ensuring guest satisfaction.

Freelancer

Jan 2020 to Dec 2021

Created and optimized digital content for clients, using tools like Google Analytics and Facebook Insights to track engagement. Developed self-management, basic SEO knowledge, and content strategy skills.

VOLUNTARY EXPERIENCE

Inclusion Officer [Elected]| UH Computer Science Society

Sep 2023 to Present

Promote inclusivity within the university tech community by organizing data-informed events and collaborating with diverse stakeholders. Supported efforts to improve student representation and equity.

Sustainability Advocate | UH Sustainability

Oct 2023 to Present

Led campus initiatives focused on waste reduction, sustainable practices, and environmental awareness. Worked on student engagement campaigns promoting eco-conscious behavior.

REFERENCE

Csaki Istvanne Biro Szilvia, Visiting Lecturer, Department of Computer Science, University of Hertfordshire. Email: s.csaki-istvanne-biro@herts.ac.uk