

Christopher Trumpet Jr.

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Education

Purdue University

Bachelor of Science in Computer Science

(Expected Graduation) May 2026

Work Experience

Software Developer, Rosen Center for Advanced Computing

Sep 2023 – Present

Developed and deployed novel solutions that integrate computer graphics, VR, and web applications, currently being used to support research and enhance education in real classroom settings

- **Internal Documentation Site with Custom CI/CD tooling** | *React, C# / .NET, Git, Python, GitHub Actions, AWS S3*
 - Built custom Docusaurus documentation platform for ~30 person department to centralize knowledge and support a workforce of rotating part-time student members.
 - Developed specialized tooling and automation pipelines to extract and aggregate API comments and project documentation from diverse sources, translating content to a common Markdown format and distributing it to the central site.
 - Implemented an essential onboarding/offboarding solution that accelerates developer ramp-up and maintains organizational knowledge for projects frequently rotating in and out of active development, directly addressing a core departmental need.
- **Virtual Biosafety & Microbial Analysis Lab** | *C#, Unity 3D, Git, Blender 3D, Substance Painter, AWS S3*
 - Engineered a robust simulation system utilizing finite state machines for deterministic logic flow and the Factory Pattern to streamline dynamic data generation, managing full-cycle development using Git and GitHub Actions.
 - Facilitated client meetings to translate requirements into technical specifications, leveraging these design patterns to deliver a scalable web application while leading a three-member team.
- **Networked Virtual-Reality Nursing Simulator** | *C#, Unity 3D, Git, Photon Network, Unity 3D, Blender, Ink, AWS S3*
 - Engineered a multi-user virtual reality training simulation using Unity and Blender, providing a realistic, synchronized environment for nursing class clinical skill practice within Meta Quest headsets.
 - Improved experiences working with a networked, real-time system, and interdisciplinary teamwork through bi-weekly meetings, program revisions, and paired programming.

Projects

- **Business Operations ERP (Purdue SATS)** | *NextJS, PostgreSQL, TailwindCSS, Zod, Clerk* **Feb 2026**
 - Engineered a full-stack ERP system to centralize organizational finances, actively managing over \$400,000 in club grant funding and asset tracking.
 - Enforced strict grant compliance and secured financial transactions by implementing role-based access control, immutable audit trails, and database-level transactions with optimistic locking.
- **Automated Phishing Campaign (Catapult Hackathon)** | *Python, SQL, React* **Apr 2025**
 - Launched phishing campaigns through algorithmically selecting targets, and automatically composing attacks and a report on findings with Python CLI and ElevenLabs API.
 - Performed employee threat scoring from CSV/DB ingestion and generated customized Markdown/PDF debriefs and reports.
- **Pizza Deliver Web App** | *React, React Router, Redux, Tailwind CSS, Stripe, Firebase* **Mar 2025**
 - Built a SPA pizza ordering web app with React and Redux, featuring a dynamic menu, cart management, and real-time order tracking with multi-step routing via React Router
 - Integrated Stripe for secure payment processing and styled a responsive, mobile-friendly UI with TailwindCSS to deliver a seamless end-to-end ordering experience
- **Custom Dynamic Interpreter** | *Java, C, Make* **Oct 2024**
 - Developed a dynamically typed programming language featuring a hand-written scanner, a single-pass compiler, and a custom stack-based bytecode virtual machine for high-performance execution.
 - Implemented a mark-and-sweep garbage collector to handle manual memory management, optimizing runtime efficiency through string interning and nan-boxing/pointer tagging.

Technical Skills

Languages: C, C++, C#, Java, JavaScript/Typescript, SQL, HTML/CSS, Bash Scripting, Python, R

Frameworks & Tools: NextJS, .NET, React, Unity3D, JUnit, NodeJS, GDB, Ropper, Make, Clerk

Design: Blender3D, Figma, Adobe Photoshop, Adobe After Effects

Additional: Microsoft Excel, AWS, Linux (Ubuntu, Fedora), Asana, GitHub Actions, Kubernetes, Docker