

Randall Krouth

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## Education:

**State University of New York at Brockport**, Brockport NY

Senior Status - Bachelor of Science in Computer Science: Software Development

**Languages:** ASP.NET, C#, C++, C, Java, Python, XAML, HTML, CSS, PHP, JavaScript, Typescript, React, Node.js, SQL, Swift, XML, JSON, YAML

**Frameworks, Tools, and Libraries:** Syncfusion, Qt, OpenCL, CUDA, Apache Arrow, Keycloak, Auth0, Jenkins, REST API's, JWT, MongoDB, Docker, Kubernetes, Flask, Bootstrap, FastAPI, Django, Express.js, jQuery, CMake, PyTorch, Tensorflow, Sci-Kit Learn, Matplotlib, ML.NET, Plotly, Seaborn, JUCE, Unity, Unreal Engine, Apache, NGINX, OpenShift, Avalonia

**Target Deployments:** Cross-Platform including Windows, MacOS, Android, Linux, and iOS

**Cloud Service Providers:** Azure, Google Cloud Platform (GCP), Amazon Web Services (AWS)

**Software:** Visual Studio, Xcode, BurpSuite, NMAP, Kali Linux, Blender, pgAdmin, Figma, Adobe Photoshop, Adobe XD, Adobe Lightroom, Adobe Illustrator, Adobe Premiere Pro, Final Cut Pro, Ableton Live, Microsoft Word, Microsoft Excel, Microsoft PowerPoint

**CI/CD Pipelines:** GitHub Actions, Jenkins, Gitlab CI/CD, OpenShift

**Programming Strengths:** Secure coding practices including input validation and input sanitization. Familiarity with component-based programming techniques, and continuous CI/CD integration. Computing with parallel processing: multithreading, SIMD optimization, vector operations, and GPU Acceleration (CUDA, OpenCL). Understanding of memory usage for large datasets (virtual, shared, stack, and heap) including cache optimization techniques. Elimination of data race through use of mutual exclusion, atomic operations, unique pointers, shared pointers, and manual memory management. Programming techniques such as asynchronous programming, coroutines, event driven programming, functional programming, and object orientated programming. Advanced data analytics including machine learning, prompt engineering, and AI techniques. Penetration testing with use of various SAST, DAST, IAST, and RASP applications.

## Other Work Experience:

Freelance & Independent Projects (2021 to Current)

- Developed scalable cross-platform application using ASP.NET Core Web API and Docker
- Designed and created 100's of machine learning models

- Built RESTful API's, cloud-based backends, and CI/CD pipelines
- Designed and developed responsive web applications and responsive native applications
- Game Design & Development

#### CNC Operator, Precise Tool & Manufacturing (2024 to Current)

- Performed machine operator tasks including loading and unloading machines
- Measured parts to 0.003" tolerance to ensure products met design specifications
- Deburred, tumbled, and washed Parts

#### **Programming Experience:**

- Syncfusion Applications (.NET MAUI, React)
- Website Development (Front-End, Back-End, UX/UI, SEO)
- Game Development (Unity & Unreal Engine)
- Machine Learning and AI Applications (Python, ML.NET)
- Audio Synthesizers & Effect Plugins (JUCE)
- Qt Development (C++, CMake)

#### **Certificates:**

- IBM Full Stack Software Development
- IBM Back-End Development
- IBM AI Engineering
- IBM DevOps and Software Engineering
- IBM IT Fundamentals for Cybersecurity
- IBM Security Analyst Fundamentals
- Google UX Design
- Google Advanced Data Analytics
- LearnKartS Certified Ethical Hacking
- UC Davis Secure Coding Practices
- LearnQuest Advanced Network Security
- TryHackMe DevSecOps
- TryHackMe Security Engineer
- LearnKartS Certified Solutions Architect
- Google Cloud Fundamentals: Core Infrastructure
- Whizlabs Azure Identity, Governance, and Monitoring Solutions
- C#, SQL, C++, C, Java, Python, HTML, CSS, PHP, JavaScript, and Swift 4

#### **Training:**

- Agile Development and Scrum
- Relational Database Administration (PostgreSQL, NoSQL, MySQL, IBM Db2)
- Blender Sculpting, Animation, and Rigging including Physics Integration
- UX/UI Design, Graphic Design, Audio, Image, and Video Editing
- Diagnosing, Optimizing, Securing, and Sanitizing Applications
- Hyperparameter Tuning & Predictive Analytics
- Penetration Testing & Hardening of Operating Systems
- Unit Testing & Integration Testing including Test and Behavior Driven Deployment