

# Beau Carlson

## Edge and Industrial Network Systems Research Intern

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### SUMMARY

Master's student in Computer Engineering at the University of Illinois, equipped with practical experience in edge computing and industrial IoT through extensive academic projects. Proficient in C# and Python programming, focusing on developing scalable software solutions. Demonstrated expertise in network fundamentals, including TCP/IP and secure communication matters. Excels in collaborative efforts, consistently contributing innovative technology insights that drive success in research-driven environments.

### EDUCATION

#### Master's Degree in Computer Engineering

University of Illinois 🎓 GPA: 3.8 📅 2026 📍 Champaign, IL

*Coursework: Networking, Distributed Systems, Edge Computing, Software Engineering*

#### Bachelor's Degree in Computer Engineering

University of Illinois 🎓 GPA: 3.7 📅 2024 📍 Champaign, IL

*Coursework: Programming, Data Structures, Algorithms, Digital Systems*

### TECHNICAL SKILLS

- **Programming Languages:** C#, Python
- **Networking Principles:** TCP/IP, Routing, DNS
- **Software Development Tools:** Git, CI/CD, Unit Testing
- **Industrial IoT Technologies:** Edge Devices, Cloud Integration, MQTT
- **Analytical Frameworks:** Data Visualization, Real-Time Processing, Monitoring Systems
- **Project Management Tools:** Trello, JIRA, Asana
- **Cloud Platforms:** AWS, Azure, Google Cloud
- **Documentation Standards:** IEEE Formatting, Markdown, LaTeX
- **Security Protocols:** VPNs, Firewalls, Intrusion Detection
- **Research Methodologies:** Empirical Studies, Case Analyses, Technical Writing

### SKILLS

- C#
- Python
- Edge Computing
- Industrial IoT
- Networking
- CI/CD
- Data Analytics
- Software Prototyping
- Agile Development
- Data Processing
- System Integration
- Performance Analysis
- Network Security
- Device Management

### EXPERIENCE

#### Research Assistant

University Research Lab 📅 January 2025 - Present 📍 Champaign, IL

Supported cutting-edge research in edge computing architectures, enhancing scalability for diverse industrial applications.

- Executed rigorous study on edge computing, focusing on scalability and performance challenges in practical settings.
- Developed prototypes utilizing C# and Python to streamline data processing and enhance analytics within IoT ecosystems.
- Engaged collaboratively with faculty and peers during system testing phases, driving improvements across distributed frameworks.
- Inspected network conditions rigorously, identifying critical issues while ensuring seamless edge-to-cloud connections.
- Authored detailed technical reports summarizing findings, projecting potential innovations for publication at academic venues.
- Effectively communicated research outcomes during presentations, gaining acknowledgment from both faculty and industry professionals.

#### Capstone Project Developer

Student Innovation Lab 📅 August 2024 - December 2024 📍 Champaign, IL

Conceptualized and developed an innovative prototype system designed for real-time monitoring of industrial equipment.

- Pioneered a system leveraging edge analytics to monitor equipment operations via immediate data processing capabilities.
- Implemented features to manage devices effectively and crafted workflows focused on reliability across processing events.
- Linked various datasets into the prototype, collaborating closely with cross-functional teams to achieve holistic integration.
- Conducted thorough evaluations of system efficiency, producing actionable insights that informed strategic optimizations.

- Delivered dynamic project presentations to faculty, receiving commendations for creativity and execution.
- Utilized Git effectively for version control, integrating automated testing strategies to sustain code quality.

## Hackathon Team Member

Various Events 📅 March 2024 📍 Springfield, IL

Collaborated intensively during a competitive hackathon to devise IoT-based solutions for smart city initiatives.

- Formulated an application prototype using edge devices to engage environmentally focused monitoring points.
- Worked alongside multidisciplinary teams, balancing tech-stack proficiency with practical IoT applications in tight deadlines.
- Ensured efficient and secure device communication using extensive understanding of networking protocols.
- Exhibited presentation skills on project day, showcasing effective teamwork under challenging time constraints.
- Acquired adeptness in rapid iteration cycles and agile methodologies relevant for current tech landscape developments.

## LEADERSHIP & AWARDS

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- Dean's List, University of Illinois (2024, 2025)
- First Place, Regional Hackathon (2024)

## CERTIFICATIONS

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- Certified in Python Programming 📅 2025
- AWS Cloud Practitioner 📅 2025

## PROFESSIONAL AFFILIATIONS

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- Member, Computer Science Club, University of Illinois (2023 - Present)
- Volunteer Tutor, STEM Mentorship Program (2023 - Present)

## LANGUAGES

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- English (Native)

## ADDITIONAL INFORMATION

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**Work Status** : Authorized to work in United States. No sponsorship required.

## REFERENCES

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AVAILABLE ON REQUEST