

# Joel Beauregard

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## EDUCATION

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### University of Texas at Arlington

*B.S. in Computer Science, Cybersecurity Certificate, GPA: 4.0*

Arlington, TX

May 2027

## EXPERIENCE

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### Software Engineering Intern

May 2025 – August 2025

*Oracle*

- Architected & documented a new Network Traffic Analytics feature for VCNs in Oracle's **PCA** Product
- Evaluated network traffic flows and system constraints to guide architectural decisions for feature design
- Used **Python, Bash, Kubernetes, Cisco Switches, and Podman** to develop and validate feature components
- Verified feature integration within existing network infrastructure to ensure compatibility with VCN architecture
- Integrated into **CI/CD workflows** that provision **Kubernetes** containers and run unit tests for validation
- Containerized Network Controller unit tests for **180+ tests** utilizing a **MySQL** server container
- Improved unit test performance by **80%** and enhanced error handling by refactoring **50%** of tests

### Research Assistant

August 2024 – December 2024

*Tacit Captions – UTA / The Hybrid Atelier*

- Collaborated with a team of six to develop a multi-modal captioning system and co-author a research paper
- Developed **Python (pandas)** pipelines for time-series sensor data to generate WebVTT captions
- Reviewed existing multi-modal and assistive captioning systems to inform system design
- Authored technical sections detailing signal processing and sensor data extraction workflows

### IT Tech Intern

June 2022 – August 2022 & June 2023 – July 2023

*Gilchrist Automotive*

- Supported IT operations across 21 dealership systems, ensuring uptime and minimizing disruptions
- Assisted with Dealer Management System (DMS) administration and operational support
- Managed user accounts, system updates, and network changes while maintaining data integrity and security

## PROJECTS

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### DevShell | *Linux, Bash, Python, Docker, Cloud Infrastructure*

2026 – Present

- Designing and developing a managed **Linux** development platform to eliminate local environment setup overhead
- Architecting a hybrid execution model with per-user shell environments and on-demand course-specific containers
- Provisioning isolated user environments with **SSH access** and per-user home directories
- Implementing **multi-tenant security** to ensure strict isolation between users and prevent unauthorized access
- Targeting university-scale deployment to support on-demand development environments for students
- Defining **API** endpoints for environment provisioning, configuration, and lifecycle operations

### Concurrent TCP Port Scanner | *Python, Asyncio, Scapy*

- Designed and implemented a **concurrent** TCP port scanner to scan multiple hosts and large port ranges
- Implemented SYN-based scanning to identify open ports while minimizing connection overhead
- Built banner-grabbing functionality to extract service metadata from open ports
- Developed an **asynchronous** scanning pipeline to improve throughput
- Structured modular components to support extensibility

### Thermodynamics Property Database | *MySQL, Python, Bash, Docker*

- Designed and implemented a containerized **MySQL** database for thermodynamic property tables
- Designed a relational schema to model thermodynamic properties
- Automated ingestion of CSV datasets using **Bash** scripts
- Built a **Python CLI** tool to query thermodynamic data
- Automated setup and deployment using **Docker**

## TECHNICAL SKILLS

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**Programming:** Python, Bash, Java, MySQL, C, C++

**Technologies:** Podman, Docker, Kubernetes, Helm Charts, OCI

**Tools/Systems:** Ubuntu, Git, VCNs, Cisco NX-OS, SQLAlchemy, Scapy, Asyncio, pandas

**Interests:** Networking, Distributed Systems, Cloud Computing, Cybersecurity, Artificial Intelligence