

Education**The University of Texas Rio Grande Valley**

Dec 2025

*Masters of Science in Computer Science***Leeds Beckett University**

Apr 2019

*B.Sc.(Hons) in Computing***Summary**

Skilled in data structures, algorithms, web and mobile application development, Unix/Linux, data analytics, machine learning, reinforcement learning, natural language processing, networking and security.

Skills**Programming Languages:** Python, PHP, Java, .NET, C#, C++, Kotlin**Web Technologies and UI/UX:** HTML, CSS, JavaScript, JQuery, React.js, Node.js, Vue.js, Next.js, Redux, API Integration, REST APIs, TypeScript, Figma, Canva**Web Frameworks:** Laravel, CodeIgniter, Django, Flask, Express, Spring Boot, ASP.NET**Python Frameworks and Libraries:** Pandas, NumPy, Matplotlib, PyTorch, TensorFlow, Keras, Scikit-learn**Data Analytics and Tools:** MySQL, SQL Server, PostgreSQL, Oracle, Power BI, Tableau, SPSS, SAP Analytics Cloud**Version Control and Cloud Platforms:** GIT, AWS, Apache Tomcat, Azure, DevOps (CI/CD Pipelines)**Containerization and Deployment:** Docker, Kubernetes, Render, Vercel, Heroku**Testing, Automation and Workflows:** Jest, PyTest, Postman, Unit Testing, Integration Testing, Jira**Development Environments:** Visual Studio, Visual Studio Code, Android Studio, IntelliJ, Eclipse, Google Colab**Work Experience****Graduate Research Assistant/Data Analyst - Office of Student Success**

Oct 2023 – May 2025

*The University of Texas Rio Grande Valley**Edinburg, Texas*

- Developed institutional Power BI dashboards using DAX, Power Query and implementing row-level security, including a secondary admissions dashboard that enhanced academic planning by tracking prerequisite course enrollment, while proactively supporting 20+ students with tailored data-driven insights contributing to a 0.05% increase in university graduation rates.

- Engineered a Python based web crawler to automate data extraction from data sources and built an interactive web interface using Python Flask to streamline academic roadmap creation significantly reducing time and effort.

Web Application Developer

Aug 2020 – Aug 2023

*My Shop Asia Pvt Ltd**Kathmandu, Nepal*

- Built two e-commerce web applications, myshopasia.com and wholesaleshopping.com, utilizing Node.js, Express.js, React.js, HTML, CSS, JavaScript and PostgreSQL with comprehensive testing and QA to serve over 10,000 customers.
- Optimized five subsidiary websites by refining front-end components and resource loading, cutting load times by 25% and increasing user engagement by 20%. Measured using Google Analytics during 4 months before and after deployment.
- Designed and managed relational databases for 10 retail companies using MySQL and PostgreSQL with Laravel, optimizing queries and automating workflows, reducing report generation time and inventory updates by 30%.

Backend Developer

Dec 2019 – Aug 2020

*EK Solutions Pvt. Ltd**Kathmandu, Nepal*

- Developed EmbraceHealthNet.com, a health web app serving 1,500+ daily users. Built custom authentication, implemented security best practices, and optimized booking, payment, and document systems improving performance and scalability by 35% through optimized database queries and load handling.
- Launched 360player, a platform for 360-degree media sharing attracting over 2,000 users in its first month.
- Collaborated on a web crawling project using Python and BeautifulSoup to extract, clean, and structure large-scale data for analysis, implemented efficient parsing and rate-limiting strategies to enhance data accuracy and crawl performance.

Backend Developer Intern

May 2019 – Dec 2019

*Code Logic Technologies Pvt. Ltd**Kathmandu, Nepal*

- Developed the RESTful API backend for a mobile attendance system, enabling secure login and real-time attendance tracking for over 500 employees, with optimized endpoints and database design for reliable synchronization and scalability.
- Designed and implemented SmartConsultancy's back-end architecture supporting 1,000+ active users.
- Integrated user registration, payment processing, and multimedia quizzes, increasing platform engagement by 40%.

Projects

RL-Based Recommender System for MOOCs (UTRGV)

Aug 2023 – Dec 2023

•Developed a reinforcement learning-based recommender system using the actor-critic algorithm leveraging PyTorch and TensorFlow. Designed a custom reward function for self-supervised learning, increasing recommendation accuracy by 15%.

Deep Reinforcement Learning with PyTorch (UTRGV)

Aug 2023 – Dec 2023

•Implemented a Deep Q-Learning agent in PyTorch to play OpenAI Gym's Atari Donkey Kong, leveraging CNN-based feature extraction and GPU-accelerated training using CUDA.

Web Application for Hosting Service Providers (UTRGV)

Jan 2024 – May 2024

•Designed, developed and implemented a scalable relational database architecture for "HamroMercado.com", a web app enabling seamless service bookings using PHP Laravel, React.js, HTML, CSS, JavaScript, MySQL deployed on Heroku.

Coffee Review Classification using Naïve Bayes (UTRGV)

Jan 2024 – May 2024

•Built a text-classification pipeline using tokenization, stemming, and a Multinomial Naïve Bayes model, achieving an F1-score of 0.94 on 5-fold cross-validation.

Business Intelligence System for TrendSetters Apparel Co. (UTRGV)

Aug 2024 – Dec 2024

•Built an end-to-end Business Intelligence solution in Microsoft Fabric, integrating multiple fact tables, data marts, OLAP models, and predictive analytics to optimize sales, inventory, and marketing performance for retail decision-making.

CartPole Emitter-Receiver Using Reinforcement Learning (UTRGV)

Jan 2025 – May 2025

•Implemented a Proximal Policy Optimization (PPO)-based reinforcement learning agent in Webots using an emitter-receiver Python interface to train a cart to balance a pole.

Crazyflie Drone QR Detection (UTRGV)

Jan 2025 – May 2025

•Programmed an autonomous Crazyflie drone to fly in an expanding spiral and detect QR codes using OpenCV and implemented logic to pause, log, and resume search upon detection.

•Trained and simulated the drone's behavior in ARGoS and Webots to optimize flight control, area coverage, and target localization using computer vision and Python.

Product Sales Dashboard using Tableau (Self)

May 2025 – May 2025

•Designed an interactive Tableau dashboard analyzing Superstore sales to compare Top 5 products vs. other products across sub-categories, regions, and segments.

•Built parameter-driven logic with Level of Detail (LOD) calculations for dynamic top-product ranking, performance benchmarking, and trend insights for business leaders.

Lesion Segmentation using Deep Learning (Self)

Aug 2025 – Sep 2025

•Developed an automated lesion segmentation model using a U-Net with ResNet-34 encoder in PyTorch.

•Implemented BCE + Dice loss, advanced data augmentations, and post-processing, achieving a Dice score of 0.96 and IoU of 0.93 for accurate lesion boundary detection.

Restaurants App (Self)

Sep 2025 – Oct 2025

•Built a restaurant discovery app end-to-end using React, Vite, Node.js/Express, and PostgreSQL, designed the DB schema, implemented search/filter across attributes, slug-based routing for SEO-friendly pages, and a clean, responsive UI.

Virtual Community Space (Self)

Sep 2025 – Oct 2025

•Built a full-stack React app with an interactive SVG map and detail pages, backed by an Express REST API and PostgreSQL and deployed on Render using CI/CD pipelines and implemented location-based event browsing, global events view with filtering/sorting, and live countdowns to upcoming events.

Conferences and Presentations

•**Bhatta, S.** et.al. "Reinforcement Learning Based Recommender System for MOOCs", *Emerging Researchers National (ERN) Conference in Science, Technology, Engineering and Mathematics (STEM)*, April 2025.