

# Andrea Valdez

andreavaldez.vercel.app - <https://github.com/andreavaldez4> - [valdezandrea2006@gmail.com](mailto:valdezandrea2006@gmail.com) - <https://www.linkedin.com/in/andreavaldez-cs-engineer/>

## EDUCATION

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**Tecnológico de Monterrey, Monterrey, México**

2024 - 2028

*B.S. in Computer Science*

- Academic Achievement Scholarship
- GPA (95/100)
- Courses: The Complete Python Pro Bootcamp, Interactivity with JavaScript, Build Responsive Real-World Websites with HTML and CSS.

**Honorable Mention for Excellence**

PrepaTec Garza Lagüera, 2024

## EXPERIENCE

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**Edumakers at Tecnológico de Monterrey**

January 2025 - Present

- Developed a **Python-based software** that converts text into **Braille STL files** for 3D printing, enhancing accessibility in education.
- Implemented **data processing algorithms** to convert alphanumeric text into Braille symbols, ensuring compliance with **standard Braille dimensions**.
- Created an **automated pipeline** for STL generation using **NumPy-STL and Pandas**, optimizing data handling and 3D model creation.
- Designed a **modular system** that allows users to generate custom Braille and text plates with personalized dimensions.
- Project inspired by collaboration with Wake Forest University and aligned with **assistive technology advancements**.
- Developed a **web platform** using **React** to integrate the Braille text-to-STL conversion tool, making it accessible for any user.

**Urban risk mapping using NLP and Twitter Data**

February 2025 - Present

- Implemented sentiment analysis enhancements in **Python**, integrating engagement metrics (likes, retweets) to refine tweet impact assessment.
- Expanded the **Named Entity Recognition (NER)** model in Python (using SpaCy) to include additional location categories.
- Developed **geospatial data processing pipelines** in Python to improve the accuracy of urban risk mapping.
- Contributed to a **multi-layered risk map** for urban infrastructure vulnerabilities in Monterrey, supporting emergency response and urban planning.

**Neuma E-Commerce Webpage Development**

March 2025

- Developed and deployed a fully functional **e-commerce website** for Neuma, facilitating online merchandise sales.
- Implemented a **secure and user-friendly** payment system, ensuring seamless and reliable transactions.
- Designed an **intuitive and responsive user interface**, enhancing accessibility and engagement across devices.
- Optimized **performance and scalability** to support future growth and increased traffic.

**Coffee Shop Inventory Management in C++**

Tecnológico de Monterrey, 2024

- Developed an **object-oriented C++** program for a coffee shop inventory system, optimizing product record management through class-based structures.
- Designed and documented a **UML class diagram** to model system architecture, ensuring scalability and maintainability.
- Integrated user input handling and **validation mechanisms** to enhance system robustness and prevent errors.

**Spotify Data Analysis with Python**

Tecnológico de Monterrey, 2024

- Analyzed Spotify datasets using Python, using **Pandas and Matplotlib** for data processing and visualization.
- Developed functions to generate frequency and popularity graphs, **extract key statistics**, and filter tracks by popularity, duration, tempo, and loudness.
- Implemented an interactive program for **dynamic data exploration**, enhancing analytical insights.

## SKILLS AND INTERESTS

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**Technical:** Python, C++, HTML, CSS, MATLAB, Git, Latex, Fusion,

## LANGUAGES

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**Language:** Spanish native speaker, English B2, German B1