

# Anuk Centellas

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## Education

**Mathematics/Computer Science BS, Linguistics BA** | Western Washington University

Expected Graduation: June 2025

4.0 GPA

Honors College

Honors Interdisciplinary Studies Minor

## Projects

**Elizalike** | Python | November 2024

- Used regular expressions to handle personal deixis for all 1st and 2nd person subject pronouns, as well as all forms of the verb be.
- Implemented keyword recognition in user input to prompt a predetermined response, or a response that retains a part of the input

**Phoneme Classification Model** | Python | November 2024

- Used Scikit-learn's MLPClassifier to create an ensemble model of twelve neural networks.
- Given a vector representation of audio, the model classifies that audio as one of 61 phonemes using probabilistic voting.
- The four best performing NNs are given more votes, increasing ensemble model performance.
- Involved extensive hyperparameter tuning and comparison to other model types.

**Arbitrarily Deep Neural Network** | Python | October 2024

- Pair programmed to implement a neural network from scratch, using numpy and argparse.
- NN can train on classification and regression data, handles minibatching, and has a verbose mode.
- User can input data files and hyperparameters.
- Based on user specified frequency, program evaluates NN on the dev set and prints performance.

**Zombie Apocalypse Video Game** | Python | March 2023

- Fully functioning zombie apocalypse themed text-based video game.
- Program takes input from the user to determine the next stage of the game, some randomization.
- Individual project with feature and storyline input from colleagues, tested by colleagues.
- Required independent research, goal setting and tracking, and accountability to complete project.

**Menstrual Cycle Tracker** | Python | May-June 2022

- Takes data from a CSV file to populate and display a calendar with given data and some predicted data.
- Allows user to input data, predicts next period, calculates average length of period and menstrual cycle.
- Calendar displays recorded daily symptoms and symptom intensity in the form of color and size coded dots so that the information is easily readable and accessible to the user.
- Allows user to have full control over their medical information, ensuring privacy.
- Provided and received constructive feedback from peers to help improve each other's programs.

## Coursework

Algorithms and Data Structures, Formal Languages and Functional Programming, Analysis of Algorithms and Data Structures, Object Oriented Design, Machine Learning, Linear Optimization, Nonlinear Optimization, Numerical Computation, Calculus I, II, III, Linear Algebra, Differential Equations, Elementary Analysis, Statistics and Probability, Linguistic Analysis, Phonetics, Phonology, Syntax and Morphology, Semantics and Pragmatics, Formal Semantics, Sociolinguistics, Spanish Linguistics, Computational Linguistics.

## Experience

### **Math Fellow** | Western Washington University | September 2022 - Present

- Provide math tutoring and related resources to students to help improve their skills and performance.
- Collaborate with other fellows and students themselves to create the best possible learning space.
- Encourage students to take the lead, realize and learn from their mistakes, and think critically about what we are working on so they can grow their knowledge base of problem-solving tools.
- Continue to learn about new topics and new methods through tutoring others and from coworkers.

### **Machine Learning Research** | Western Washington University | April 2024 - Present

- Part of Dr Brian Hutchinson's Machine Learning research group.
- Working on a NLP project in collaboration with the Speech Pathology department.
- Specifically interested in transcribing toddler speech from recordings.

### **Volunteer Head Counselor** | Camp Fire | August 2016, 2017, 2018, 2019

- Lead a group of 8-12 young campers in various activities including arts and crafts, sports, and hikes.
- Ensured campers followed safety guidelines, motivated social skill development, and collaborated with other volunteers and staff to make everyone's experience as fun and beneficial as possible.
- Advocated for campers' needs as well as my own during conflicts to ensure every voice was heard.

### **Courtesy Clerk** | Puget Consumers Co-op | May 2021 - September 2021, June 2022 - September 2022

- Worked with other employees to keep the store clean and organized.
- Efficiently bagged groceries for customers and offered carry-out.
- Followed Covid protocols to keep customers and employees safe.
- Helped customers who had questions.

### **Horticulture Student/Greenhouse Volunteer** | Nathan Hale High School | 2019-2023

- Was a horticulture student in high school and a volunteer at the greenhouse for a couple of summers.
- Did seed planting, transplanting, watering, plant labeling, rooting, and took plant cuttings.
- Helped spread and level gravel on a strip of land to prepare it for water barrel installation.
- Used a lot of the knowledge I gained to improve my family's garden at home.

## Skills

Python, Java, Advanced Mathematics, Microsoft Office, Thonny, Visual Studio Code, native speaker of English, Spanish, and Catalan.

## Awards

- College of Science and Engineering Annual Scholarship from WWU in 2024
- Anne Lobeck Linguistics Student Scholarship from WWU in 2024
- Mathematics Memorial Scholarship from WWU in 2023 and 2024.
- American Association of University Women award for Mathematical Excellence in 2021.