HENRY ZELENAK

Contact

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Henryzelenak.com

Profile

Driven and enthusiastic individual with a passion for learning on the job • Works well alone and with a team • Self-motivated but takes direction well • Successful leader and team builder • Well-versed in project organization • Enjoys working on projects that expand on knowledge • Creative, intuitive, and flexible

Field Research Technician — NYS Integrated Pest Management, Cornell AgriTech — May 2043 - Current

Facilitating several field trials for NYS Integrated Pest Management. Collecting and cataloging data, identifying insects or plants, and maintaining active specialty crops field trials.

• Set, monitor and service insect traps • Manage application and assess pesticide treatment • Administrate field activities such as harvesting and soil agitation

Graduate Assistant - Collaborating Creatively Across Visual Abilities (CCAVA) Group, SUNY Polytechnic Institute — October 2023 - Current

- Working with a team of researchers to document, catalog, and test visual aid technologies and develop a website with leading-edge accessibility
- Using Javascript, HTML5, CSS3, and LAMP stack

Softwares

- Spark
- Tableau
- Universal Data Tool
- Google Colaboratory / JupyterLab
- Google G-Suite
- Microsoft Office Suite

Teaching Assistant / Tutor - SUNY Fredonia Comp Sci Dept. — January 2023 - May 2023

- Assisted two full-time faculty members in grading assignments, conducting lab sessions, and tutoring students
- Achieved a 3.9 GPA in Computer Science coursework to qualify

Skills

- Data Analysis and Visualization (Excel, Tableau, Python and R)
- Foundational Agricultural Sciences applied skills
- Web Design (Javascript and MERN)
- Machine Learning (GBMs, VAEs, CNNs, GenAEs, LLMs)
- A/V Production (ProTools, DaVinci Resolve, Logic Pro)

Education

- SUNY Schenectady County Community College, Schenectady, NY — Associate of Applied Science, Music Audio Technology, May 2021
- SUNY Fredonia, Fredonia, NY — Bachelor of Science in Sound Recording Technology, Minor in Computer Science, May 2023
- SUNY Polytechnic Institute, Utica, NY — Master of Science in Data Science, May 2025

Notable Achievements

- President's List (GPA of 3.7) — 2019, 2020, 2021, 2022
- Awardee, SUNY Schenectady Foundation Award, 2021
- Awardee, New York State Assembly Certificate of Merit, 2021
- Tau Sigma National Honor Society Member
- Published paper "Identifying Periodic Signal Patterns in Audio Streams" in IEEE conference proceedings, 2022

References

- **Dr. Kristina Boylan**

  Associate Professor and Director of the CCAVA Research Group, College of Arts and Sciences, SUNY Polytechnic Institute

- **Marcus Lopez**

  Lead Research Technician and EIQ Data Specialist, Cornell AgriTech NYS Integrated Pest Management

- **Dr. Ana Jofre**

  Associate Professor and Director of the Gannett Gallery, College of Arts and Sciences, SUNY Polytechnic Institute

Relevant University Courses as of May 2023
Computer Science

Data Structures 341
Review of basic data structures and algorithmic complexities; recursion; topological order; sorting and searching; Huffman codes; binary trees; binary search trees; tree traversals; heaps, balanced trees; priority queues; hashing; graphs, and graph algorithms.

Discrete Mathematics 241
Study of mathematical topics needed for further study of computer science at the advanced undergraduate level, including: logic, sets, proof techniques, matrices, basic number theory, modular arithmetic, functions, linear transformations, relations, and basic combinatorics.

University Calculus 122 and 123
122: Functions, inverse functions, limits, continuity, derivatives, indeterminate forms, antiderivatives; applications to rectilinear motion, graphing, maxima-minima, related rates; computational technology. **123:** Definite integrals, the fundamental theorem of calculus, techniques of integration, applications of the definite integral in the physical sciences and geometry, improper integrals, differential equations, sequences and series.

Computer Science 121 and 221
Hands-on exposure to major topics in problem solving; algorithm design and development; top-down design and functional decomposition; data structures and control; abstract data types; static and dynamic data structures; class concepts; multi-dimensional and dynamic arrays; linked lists; doubly linked lists; stacks, queues and their implementations and applications.

Relevant University Courses as of May 2024
Data Science and Web Design

Statistical Inference 501

Statistical inference as it pertains to data exploration and analysis.

A robust overview of probability theory, frequentist and Bayesian statistics, matrix methods, linear regression, k-means clustering, and machine learning basics.

Intro to Machine Learning 507

Offers a comprehensive overview of machine learning techniques and applications. Students will explore supervised and unsupervised learning, reinforcement learning, and basic deep learning concepts. The curriculum includes data preprocessing, model building and evaluation, and practical exercises using Python libraries. Additionally, ethical and technical challenges in machine learning are addressed. The course culminates in a project where students apply their skills in a real-world context, reinforcing their learning and preparing them for advanced studies or careers in data science and machine learning.

Data Analytics Tools 504

Learning the use of Python 3.9+ and R 4.2+ as it pertains to data exploration, data analysis and visualization, and modeling.

Implemented hypothesis testing, confidence and credible intervals, linear regression, matrix methods, image classification and auto-encoders, k-means clustering, and visualizations utilizing GGPlot, Seaborn, MatPlot Library, and OpenCV 2, in R and Python.

Contemporary Trends in Data Visualization 548

Explores the intersection of visual analytics and data visualization, emphasizing design principles, cognitive science, and aesthetics in representing large-scale datasets. Through a blend of theory and practical application, students engage with visualizations across various domains and media, developing skills to create insightful and aesthetically appealing visual narratives. The course culminates in a project where students apply these principles to design their own visualizations, using tools like Tableau Public to analyze and communicate data effectively.

Intro to Stats and Matrix Methods 500

Designed to equip students with foundational skills in probability, statistics, and linear algebra, crucial for data science. The course covers basic set theory, probability rules and distributions, statistical inference, and matrix operations, including vector and matrix calculations, eigenvalues, and least-squares problems. Aimed at preparing students for advanced study in Data Science and Analytics, this course emphasizes both practical application and theoretical understanding.

Web Dev. And Design 554

Introduces students to the Document Object Model, which is the conceptual framework for building web applications. Students will acquire proficiency in HTML and CSS, and they will be introduced to JavaScript. Web design principles and accessibility standards are also studied. By the end of the course, students will be able to design and develop a basic microsite that is responsive and accessible.

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