Simon Hans Edasi

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Summary

A skilled data scientist and geophysicist with a strong foundation in analytics, data processing, and machine learning. Expertise includes signal processing, neural networks, and statistical analysis, with practical experience in glacier thickness prediction and photonic sensing. Relevant coursework and research encompass geophysical continuum mechanics, seismology, and Distributed Acoustic Sensing (DAS), providing a solid base for work in underwater acoustics. Demonstrated ability to perform in fast-paced environments, with strengths in strategic problem-solving, technical integration, and advancing innovation in complex systems.

Skills

Technical: Machine learning & neural networks, data pre-processing, data analysis & visualization, statistical analysis
Scripting: Python (*GeoPy, SciPy, pandas, numpy, matplotlib, tensorflow*); R (*car, dplyr, ggplot2, plotly*); Jupyter; Git
Soft Skills: Strategic problem solving, communication, task prioritization, collaboration, research & development

Education

University of Washington   June 2024
Master of Science in Earth & Space Sciences – GPA: 3.75   *Seattle, Washington*
- Automated the integration of remote sensing and glacier thickness data for a comprehensive glacier database.
- Applied neural networks with leave-one-out cross-validation for glacier thickness predictions, contributing to the understanding of glacier-ocean interactions.
- Established data reliability thresholds to improve regression analysis precision, showcasing the importance of dynamic glacier features in thickness distributions.

University of Washington   March 2019
Bachelor of Science in Earth & Space Sciences: Physics – GPA: 3.37   *Seattle, Washington*
- Minor: Mathematical Physics, Estonian
- Dean's list for five quarters, and annual dean's list 2014-2015.
- Course work in continuum mechanics, geophysics, electromagnetism, thermodynamics, linear algebra, and differential equations.

Specialized Coursework

Photonic Sensing | *Data Wrangling, Anomaly Detection, Data Visualization*
- Used a Distributed Acoustic Sensing (DAS) system to survey Seattle and audit traffic patterns, automating data wrangling and anomaly detection for more efficient analysis.

Statistical Inferences in Ecology | *Statistical Analysis and Inference, Data Visualization*
- Gained proficiency in R while applying ANOVA, chi-square tests, non-parametric procedures, regression models, and experimental design to biological data analysis.

Geoscience Communication | *Writing, Presenting, and Communicating Ideas*
- Collaborated with a team on a capstone presentation while learning to effectively organize and write scientific abstracts, articles, proposals, and presentations, with attention to style, tone, and visual aids.

Geophysical Continuum Mechanics | *Geophysics, Strategic Problem Solving*
- Applied differential equations and linear algebra to analyze stress, strain, and elasticity in geological materials, with a focus on stress in the Earth's lithosphere and the flow behavior of solids.

Seismology | *Geophysics, Spacial Reasoning*
- Examined stress and strain, the wave equation, travel times, amplitude and phase, reflection seismology, surface waves, and source theory, including moment tensors, radiation patterns, far-field wave shapes, source spectra, stress drop, and magnitude.

Teaching Experience

University of Washington   2024
ESS 101 – Introduction to Geology   *Seattle, WA*
- Introduction to the processes, materials and structures that shape Earth. Emphasizes the dynamic nature of the earth's tectonic system and its relationship to physical features, volcanism, earthquakes, minerals and rocks and geologic structures.

University of Washington   2023
ESS 211 – Earth Processes   *Seattle, WA*
- Introductory structural geology and geomorphology. Deformation of soil, sediment, and rock. Erosional and depositional processes and landforms. Structural, geomorphic, and climatic interactions in major tectonic regimes. Use of geologic maps and cross sections.

University of Washington   2022
ESS 102 – Space and Space Travel   *Seattle, WA*
- Explores the sun, solar storms, observations from space and from Earth; Earth's space environment, radiation belts and hazards, plasma storms and auroras, rockets and propulsion, human exploration efforts, societal impact, planetary systems and resources, and project highlighting space and its exploration.

Work Experience

University of Washington   2019 - 2022
Research Assistant, Supervisor: Dr. Alexis Licht   *Seattle, WA*
- Processed and analyzed over 150 paleosol samples, employing advanced laboratory techniques such as spectrometry and de-carbonation to generate high-quality data for paleoclimate research.
- Utilized data processing and analytical methods to contribute to a peer-reviewed publication on early Eocene paleoclimate.
- Streamlined laboratory workflows, ensuring data consistency and improving analysis efficiency through precise sample preparation.

University of Washington   2017 - 2022
Administrative Assistant / Accounts Receivables Clerk   *Seattle, WA*
- Managed invoicing and financial records for Earth & Space Sciences labs, ensuring timely and accurate payment processing for lab services.
- Maintained and reconciled financial data for multiple labs, applying meticulous attention to detail and problem-solving skills to ensure the integrity of records during audits.
- Developed a tool to track budget reconciliation statuses, improving efficiency and communication with stakeholders.

U.S. Air Force   2008 - 2014
AWACS Communication and Navigation Craftsman & Isochronal Inspection   *Elmendorf AFB, AK; Tinker AFB, OK*
- Managed the maintenance and inspection of complex communication and navigation systems on AWACS aircraft, utilizing data-driven analysis to ensure operational reliability.
- Diagnosed and resolved system malfunctions by analyzing performance data, enhancing equipment readiness and mission success.
- Led cryptographic data management and security efforts, ensuring the protection of sensitive information during critical operations.
- Trained junior airmen in system diagnostics, data handling, and technical maintenance, fostering a high-performance team environment.

Nibley Park Golf Course   2006 - 2008
Driving range and fairway ranger   *Salt Lake City, UT*
- Responsible for collecting, washing, and maintaining supply of driving range golf balls. Also responsible for cleanliness and availability of golf carts and push carts.
- Fast paced environment, strategic problem solving, prioritization of tasks, customer service.

Projects

Glacier Mapping & Estimation | *Data Wrangling, Neural Networks, Data Visualization*
- Statistical inference of glacier mean thickness using remotely sensed surface features as training features for regression analysis. Discovered and quantified significance of buttressing effect of floating ice-shelves and other marine glacier termination dynamics.

LS-TM Rainfall Prediction | *Statistical Analysis and Inference*
- Working with 40+ years of rainfall data in Seattle, WA, this project aims to predict rainfall using contributing factors such as temperature, pressure, cloud availability, and wind-speeds.

Simulation of a Creative Environment | *Statistical & Probability Analysis, Data Visualization*
- Simulated a population within the creative environment of Dungeons & Dragons. Analyzed game mechanics for probability of generating specific combinations leading to character archetypes. Delivered insights into statistical biases within the game, as well as explored potential options for balancing and expansion.

Service

University of Washington Graduate and Professional Student Senate　　　　Oct 2022 – June 2024
Senator　　　　*Seattle, Washington*
- Legislated in the UW Graduate and Professional Student Senate representing the rights and interests of over 15,000 graduate and professional students at the University of Washington. Procured funding for two departmental retreats and a picnic table to socialize on the department patio.

UAW 4121 Academic Student Employee Union　　　　Oct 2023 – May 2024
Contract Campaign Captain and Strike Captain　　　　*Seattle, Washington*
- Recruited student employees in departments across campus to join the union ahead of contract bargaining, and helped rally student employees to strike when bargaining failed to reach a fair contract.

Whale Scout　　　　2023
Landscaper　　　　*Seattle, Washington*
- Volunteered to plant bushes and shrubs on an abandoned golf course. This project is meant to restore natural waterways that support local salmon populations and ultimately orcas in the Puget Sound.

Airmen Against Drunk Driving　　　　2009 - 2012
Driver, Dispatcher　　　　*Elmendorf AFB, AK*
- Received calls and offered rides for hot-line for airmen to call for a free ride home to prevent drunk driving.