

# NGUYEN HA

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## EDUCATION

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**Master of Science in Data Science**, University of Washington, WA Expected Mar 2025  
**Bachelor in Computer Science**, Clark University, MA May 2023  
**Bachelor in Data Science**, Clark University, MA May 2023  
Minor in Mathematics

## RESEARCH EXPERIENCE

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**Graduate Student Researcher**, UW Medicine Jun 2024 – Present  
Advisor: Peter Schwab, Denise Chen

- Analyzed EEG signals to predict recovery outcomes for comatose patients with moderate to severe traumatic brain injury (TBI).
- Researched machine learning techniques to distinguish brain responses to auditory stimuli and cognitive tasks
- Developed data processing pipelines in Python on AWS to pre-process and analyze EEG data, exploring stimulus-response patterns as potential predictors of neurological recovery.
- Developed tools for clinical staff to support decision-making and improve patient outcomes by providing accurate, reliable neuroprognostication based on EEG data.

**Research Assistant**, Agroimpacts Lab, Clark University Feb 2022 – May 2023  
Mentor: Lyndon Estes

- Researched methods for generalization of image segmentation in agricultural mapping.
- Improved deep learning models for spatial classification by analyzing spatial features and transfer learning.
- Optimized image processing pipeline runtime using Python libraries.
- Developed a map-labeling web application on AWS with Sentinel Hub.

**Undergraduate Researcher**, LIPS Lab, Clark University Sep 2021 – Apr 2023  
Mentor: Gary Holness

- Reviewed theoretical challenges in statistical learning theory, focusing on the limits of machine learning algorithms in scenarios with limited datasets.
- Conducted experiments to validate theoretical concepts of generalization, leveraging transfer learning to analyze the reuse of learned features and bridge the gap between theory and practice.
- Designed scalable systems with R-CNN models to improve object detection in agriculture with TensorFlow.
- Synthesized insect datasets using GAN models to enhance model performance and reduce generalization errors in out-of-sample datasets.

**Undergraduate Researcher**, Clark University Feb 2020 – Sep 2021  
Mentor: Shuo Niu

- Analyzed YouTube video creation characteristics using grounded theory to improve media productions.
- Examined viewers' engagement by analyzing 8M YouTube comments from over 10,000 videos using emotion analysis and topic modeling.
- Developed a text classification interface in JavaScript, reducing label creation time for crowdsourcing.

## PUBLICATIONS & POSTERS

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### Conference Papers.....

- Khallaghi, S., Abedi, R., Abou Ali, H., Alemohammad, H., Asipunu, M. D., Alatise, I., **N. Ha**, Luo, B., Mai, C., Song, L., Wussah, A. O., Xiong, S., Yao, Y.-T., Zhang, Q., Estes, L. D. (2025). Generalization Enhancement Strategies to Enable Cross-Year Cropland Mapping with Convolutional Neural Networks Trained Using Historical Samples. *Remote Sensing*, 17(3), 474. <https://doi.org/10.3390/rs17030474>.

- Shuo Niu, Hugh Manon, Ava Bartolome, **Nguyen B. Ha**, Keegan Veazey. Close-up and Whispering: An Understanding of Multimodal and Parasocial Interactions in YouTube ASMR videos. In *CHI '22: ACM CHI Conference on Human Factors in Computing Systems*, April 30 - May 6, 2022, New Orleans. ACM, New York, NY, USA. <https://doi.org/10.1145/3491102.3517563>.
- Ava Bartolome, **Nguyen B. Ha**, Shuo Niu, 2021. Investigating Multimodal Interactions and Parasocial Attractiveness in YouTube ASMR Videos. In *CSCW '21: ACM Conference on Computer-Supported Cooperative Work & Social Computing*, October 23 - 27, 2021, Online virtual. <https://doi.org/10.1145/3462204.3481763>.
- Shuo Niu, Ava Bartolome, Cat Mai, **Nguyen B. Ha**. 2020. #StayHome #WithMe: How Do YouTubers Create Videos for COVID-19 Loneliness? In *CHI '21: ACM CHI Conference on Human Factors in Computing Systems*, May 08–13, 2021, Online virtual. ACM, New York, NY, USA. <https://doi.org/10.1145/3411764.3445397>.

**Posters**.....

- **Nguyen B. Ha**, Philippe Nziza, 2023. Experiments in Synthesized views for Improved Pest Detection. In ClarkFEST 20223, April 26, 2023. Worcester, MA, US.
- Ava Bartolome, Cat Mai, **Nguyen B. Ha**, 2021. #StayHome #WithMe Investigating How YouTubers Help Deal with COVID-19 Loneliness. In Clark University Winter Fest 2021, February 5, 2021, Online virtual.

**HONORS & AWARDS**

**2022**      Clark University      LEEP Research Fellowship

**WORK EXPERIENCE**

**Quality Assurance Intern**      May 2021 – Sep 2021  
 NexLab Technology      Ho Chi Minh City, Vietnam

- Improved software product quality by mapping business functions to software solutions.
- Reduced debugging time by 5% by performing quality tests and communicating with the design and development teams.

**Academic Technology Assistant**      Oct 2019 – Mar 2020  
 Clark University Office of Information Technology Services      Worcester, MA

- Maintained optimal website performance of 3 academic websites by performing quality testing.
- Troubleshoot software issues coming from students, professors, and school staff.

**TEACHING EXPERIENCE**

**Teaching Assistant**      Jan 2020 - May 2022  
 Clark University      Worcester, MA

- Classes: Honors Calculus II (S22) & Discrete Mathematics (S20)
- Hold weekly discussions and office hours. Prepared solutions and graded assignments.

**TALKS & PRESENTATIONS**

- Navigating Graduate Education: A Roadmap to Success, Speaker      Feb 2023
- Data Science Admission Open House, Panelist      Apr 2023

**SKILLS**

**Programming Languages**      Python, R, SQL, JavaScript, HTML, CSS, NodeJS, ReactJS, Java, C, C++  
**Tools**      Tableau, Power BI, Spark, DBT, AWS, Azure, MongoDB, Django, Docker, Git CI/CD  
**Machine Learning**      Scikit-learn, TensorFlow, Keras, PyTorch, SageMaker  
**Language**      Vietnamese (native), English (proficient)