Tran N. (Nina) Chau
(She/Her/Hers)

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EDUCATION

Ph.D. candidate in Bioinformatics, Virginia Tech, Blacksburg, VA   **2026**
GPA: 3.96/4.0

B.S. in Statistics, Minor in Mathematics, Virginia Tech, Blacksburg, VA   **05/2022**
GPA: 3.95/4.0

RESEARCH EXPERIENCES

Graduate Research Assistant, Advanced computational methods for genomic data   **08/2022- Present**
Li Lab, School of Plant and Environmental Sciences, Virginia Tech
- Employing AI-driven methods to discover conserved cell marker genes to transfer cell type knowledge across plant species using single-cell RNA-seq data
- Designed and implemented a computational pipeline for single-cell RNA-seq analysis leveraging both R and Python packages.

Data Science for Biomedical Imaging   **05/2022-07/2022**
Cimini Lab, Department of Biological Sciences and Fralin Life Sciences Institute, Virginia Tech, Blacksburg
- Developed a pipeline to extract tumor-dense regions from digital whole slide images of TCGA
- Leveraged convolutional neural network to identify and measure nuclear size

Detecting Misinformation on e-commerce platform   **06/2020-08/2020**
Machine Learning Lab, Department of Computer Science, Virginia Tech, Blacksburg, Virginia
- Applied text mining to extract important information from the Amazon website
- Clustered and classified collection of documents

Stock Prediction   **03/2020-06/2020**
Machine Learning Lab, Department of Computer Science, Virginia Tech, Blacksburg, Virginia
- Reduced data dimension and maximized the predictive power
- Applied different machine learning methods to improve the result

TEACHING EXPERIENCES

Undergraduate teaching assistant, Virginia Tech   **01/2022-05/2022**
- Graded homework and exams, replied to students' emails, and wrote reports

Biostatistics and R coding Tutor, Virginia Tech   **09/2021-11/2021**
- Guided new graduate students using R to visualize genomics data on the supercomputer.

Math Tutor, Blacksburg, Virginia   **03/2020**
- Designed a math improvement program for children aged 9-18 years of age

POSTERS

- **Chau, T.**, Timilsena, P., & Li, S. (2022). Understanding the cell type relationship between major grain crops using single-cell RNA-seq, *2022 Joint MAS-ASPB and UMD Plant Symposium*, University of Maryland, College Park, MD, May 25-26, 2022.
- **Chau, T.**, Parikh, V., Bloomfield, M., & Cimini, D. (2022). Examining the effect of whole genome doubling on nuclear size in human colon tumors, *2022 Summer Research Symposium*, Virginia Tech, Blacksburg, VA, July 28, 2022.

TALKS

- **Chau, Tran N.**, Prakash Raj Timilsena, Sai Pavan Bathala, Sanchari Kundu, Bastiaan OR Bargmann, and Song Li. Cross-Species Single-Cell Annotation with Orthologous Marker Gene Groups, *2024 Plant and Animal genome conference (PAG31)*, Jan 12-17th 2024.
- **Chau, Tran**, Prakash Timilsena, and Song Li. (2022). Discovery of conserved marker genes for cross-species cell type assignment by machine learning, *2022 Plant Cell Atlas Symposium*, Dec 12-13th 2022.

PUBLICATIONS

- **Chau, Tran N.**, Prakash Raj Timilsena, Sai Pavan Bathala, Sanchari Kundu, Bastiaan OR Bargmann, and Song Li. "Orthologous marker groups reveal broad cell identity conservation across plant single-cell transcriptomes." *Nature Communications* 16, no. 1 (2025): 201.
- **Chau, Tran N.**, Xuan Wang, John M. McDowell, and Song Li. "Advancing plant single-cell genomics with foundation models." *Current Opinion in Plant Biology* 82 (2024): 102666.
- Dip, Sajib Acharjee, Uddip Acharjee Shuvo, **Tran Chau**, Haoqiu Song, Petra Choi, Xuan Wang, and Liqing Zhang. "PathoLM: Identifying pathogenicity from the DNA sequence through the Genome Foundation Model." *arXiv preprint arXiv:2406.13133* (2024).
- Jin, Qing, Yiming Feng, Xavier Cabana-Puig, **Tran N. Chau**, Ronnie Difulvio, Dajun Yu, Anyang Hu et al. "Combined dilute alkali and milling process enhances the functionality and gut microbiota fermentability of insoluble corn fiber." *Food Chemistry* 446 (2024): 138815.
- **Chau, Tran**, Prakash Timilsena, and Song Li. "Gene Regulatory Network Modeling Using Single-Cell Multi-Omics in Plants." In *Plant Gene Regulatory Networks: Methods and Protocols*, pp. 259-275. New York, NY: Springer US, 2023.

HONORS/AWARDS

Whitfield Cobb Award for Academic Achievement
- This award is given to graduating seniors in the Department of Statistics with the highest overall GPA.

Ray A. Gaskins and I.J. Good Scholarship
- This scholarship is given to student have high academic achievement and devote to the community.

2nd place prize for Best Abstract Talk at the 2nd PCA Symposium

1st place prize for best speaker at the TPSC Symposium 2023 at Virginia Tech

SKILLS

Technical skills: R, Python, Linux, Photoshop
Certifications: Society of Actuaries Exam P & Casualty Actuarial Society Exam 1, 2021. Certification Number: 70580, OSHA 10 Hour General Industry Outreach. Reference Number: 26-707350881, Society of Actuaries Exam SRM. January 2022. Certification Number: 50077

COURSES

- STAT5525 Data Analytics
- CS 5814 Introduction to Deep Learning
- CS5824 Advanced Machine Learning
- CS6814 Science-Guided Machine Learning
- CS 6824 Advanced Topics Computational Biology and Bioinformatics
- SPES5984 Apply advanced AI in Genomics