Cory Gardner

PhD Student · Department of Computer Science

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Education

Saint Louis University *St. Louis, MO*

PhD Computer Science *2022 - Present*

- Advisor: Dr. Tae-Hyuk Ahn
- Relevant Coursework: Geographic Information Systems, Software Engineering, Software Development, Machine Learning, Computer Vision, Natural Language Processing, Biometry, Data Structures, High Performance Computing, Parallel Programming, Distributed Computing, Computer Security

University of Wisconsin-Madison *Madison, WI*

Open Science Grid (OSG) school *2024*

Saint Louis University *St. Louis, MO*

MS Bioinformatics and Computational Biology *2020 - 2021*

Colorado State University *Pueblo, CO*

BS Sociology *2014 - 2017*

Skills

Technical Skills

- Programming languages: C++, Python, R, CUDA, Bash
- Linux, macOS, and Windows environments
- HPC and HTC distributed computing systems
- Data analysis and data mining of large-scale datasets

Soft Skills

- Leadership and Management: Supervised and mentored graduate students on diverse research projects in the Ahn Lab, with topics such as the analysis of low-biomass metagenomic samples and federated machine learning
- Oral Presentation: Experience as a guest lecturer in university-level college classes and presenter at major conferences, including the Annual International Conference on Critical Assessment of Massive Data Analysis
- Experience in both self-directed and team research

Awards & Fellowships

National Science Foundation *2020-2021*

- BITWISE Scholarship

International Society of Computational Biology *2020*

- Fellowship for ISCB conference

Critical Assessment of Massive Data Analysis International Conference *2020*

- Best Presentation Award

Teaching Experience

Teaching Assistant

Saint Louis University *2023-2024*

- Data Structures
- Distributed Computing
- Concurrent and Parallel Programming
- Introduction to Bioinformatics

Supplemental Instructor

Saint Louis University *2024*

- Introduction to Bioinformatics II

Research Experience

Ahn Lab *Saint Louis University*

Advisor: Dr. Tae-Hyuk Ahn *2019 - Present*

- CT-image analysis (GPU-based CUDA acceleration of CT images for quality control)
- Metagenomic Analysis (Critical Assessment of Massive Data Analysis)
- RNA-seq (Novel Candidate Genes Differentially Expressed in Glyphosate-Treated Horseweed)
- Long read de-novo assembly and annotation (Haplotype-resolved Chromosome-level Genome Assembly of Saccharomyces bayanus Reveals Genome Divergence after Hybridization)
- ChIP-seq analysis
- Privacy and Inference Attacks on Multimodal Machine Learning Models

Affiliations and Memberships

International Society for Computational Biology (ISCB)

- Current member

Students for Exploration and Development of Space (SEDS)

- Current member

Publications and Conferences

Gardner, Cory, et al. ”Chromosome-level subgenome-aware de novo assembly of Saccharomyces bayanus provides insight into genome divergence after hybridization.” Genome Research (2024): gr-279364.

Yang Y, Gardner C, Gupta P, Peng Y, Piasecki C, Millwood RJ, Ahn TH, Stewart CN Jr., ”Novel Candidate Genes Differentially Expressed in Glyphosate-Treated Horseweed,” Genes (Basel), 2021.

Metagenomic Data Analysis with Probability-Based Reduced Dataset Representation, CAMDA, 2020