

Gitanshu Munjal

Chiang Mai, Thailand

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Education

Sep 2014
to
Dec 2017

University of California, Davis

Ph.D. student, GGHA, Crop Improvement, GPA 3.92

- Henry A. Jastro Research Award
- Horticulture & Agronomy Graduate Fellowship (Spring 2015)
- Horticulture & Agronomy Graduate Fellowship (Fall 2014)

Sep 2011
to
June 2013

University of California, Davis

B.S.(with Honors) Plant Sciences, Plant Breeding & Genetics, GPA 3.6

- Departmental Citation for outstanding undergraduate performance
- Ming Hop Lee Memorial Scholarship
- Inducted to Phi Sigma biological sciences honors society
- Dean's Honor Roll list every quarter at Oregon State (5 quarters)
- Drucilla Shepard Smith Scholastic Award (Oregon State)
- Loren. J Smith Agricultural Honors Scholarship (Oregon State)
- Ursula Bolt Knaus Scholarship, Dec 2010 (Oregon State)

Work History

Nov 2024
to
Present

Head of Digital Phenotyping / Senior Scientist - Data Science

East-West Seed (eastwestseed.com)

Chiang Mai, Thailand

- Building a cross-crop digital breeder's eye that connects modern vision AI with user-friendly Next.js applications to make real-world phenotyping smarter, scalable, and accessible across crop diseases and other breeding targets.
- In 2025, before the release of SAM 3, developed generalized plant-part labeling methods applicable across crops and imaging contexts.
- Developed agentic, reasoning-based workflows that automate labeling at scale.
- Created sample-efficient labeling methods that work from only a few examples, including as few as three.
- Built a generalized, automated framework for training state-of-the-art classification models on arbitrary classes. A single reusable trainer and modeling strategy consistently outperformed published task-specific approaches across evaluated tasks, avoiding months of custom model development.
- Built crop-agnostic modules for scalable geometry and color measurement from harvested, detached, or flattened plant material using simple mobile-phone images, removing the need for field studios or highly controlled imaging environments.
- Developed robust methods to align database field maps with drone-derived orthomosaics, isolate individual field plots, and extract plot-level measurements.
- Consolidated this research into a scalable platform with a Next.js front end, PostgreSQL back end, and role-based access control that supports collaboration across teams. The platform is already used at scale in two crops and is being tested in more than five others.
- Developing a user-friendly platform for research field-operations management and communication to improve resource planning, allocation, and monitoring; currently in testing, with rollout planned by the end of 2026.
- Leading the consolidation of cross-functional information into a strategic breeding-pipeline and research-assessment platform with integrated views across major internal departments and connections to the data lake now under development; rollout planned by the end of 2026.

- Hosted and mentored three interns and directly supervised two team members.

Feb 2023
to
Nov 2024

Pre-breeder - Corn

East-West Seed (eastwestseed.com)

Chiang Mai, Thailand

- Led the structured development of new traits, technologies, and analytical tools for sweet and waxy corn breeding in collaboration with internal and external partners.
- Developed - and continue to maintain - modular R Shiny and ShinyProxy solutions supporting multiple types of statistical-genetics analyses across crops and functions.
- Helped lead and steer global standardization of phenotyping protocols across the corn breeding program.
- Developed discovery populations for more than five traits and delivered new or improved trait-linked markers for two traits.
- Initiated long-term, landrace-based pre-breeding populations separate from elite germplasm, combining accessions from more than 70 countries to provide an enduring genetic resource for the corn breeding program.

Jan 2018
to
Dec 2022

Research Lead

Rama Krishna Hybrid Seeds

Delhi, India

I was single handedly responsible for the development of:

- Early stage breeding programs for various OP crops for Asian export markets.
- MET approaches for assessing new products from international collaborators in India.
- Semi-automated workflows for farm management/monitoring and office accounting
- Internal SOPs around all aspects of the logistics of seed export/import
- Migration of the company to Google workspace
- An R shiny dashboard as a market research tool with Indian import and export data for any given HSN
- Initial efforts in assessing the potential for currency exchange modelling together with EEFC banking to improve returns for the company.

Jan 2015
to
Dec 2017

Graduate Student Researcher

Brummer Lab ([website](#))

Department of Plant Sciences-University of California, Davis

- Project aimed at dissecting the genetic control of autumn dormancy in autotetraploid alfalfa *Medicago sativa* using selection mapping and genome-wide association mapping approaches using low-coverage sequencing ([Dissertation Link](#)).

Sep 2013
to
March 2014

Breeding Assistant-Silage Corn

Forage Genetics International (foragegenetics.com)

Davis, CA

- Responsibilities included: Database building and management, programming to improve efficiency of inventory and phenotyping operations, operating field equipment, experimental design, data collection and analysis, agronomic field-work, and leading field crews.

Dec 2012
to
August 2013

Undergraduate Intern/Research Assistant

Ross-Ibarra Lab (rilab.ucdavis.edu)

Department of Plant Sciences - University of California, Davis

- Project aimed at genome wide association analysis of maize phenotypes in highland and lowland environments. Responsibilities included: data collection (phenotyping), statistical analysis using R, and maintaining plants in the growth chamber.

- Dec 2012*
to
April 2013
- Undergraduate Intern/Research Assistant**
Tomato Genetic Resources Center (tgrc.ucdavis.edu)
University of California, Davis
- Project aimed at analyzing crossing relationships in tomato species. Responsibilities included: pollination, floral harvest, and scoring pollen tubes in styles using fluorescence microscopy.
- July 2012*
to
August 2012
- Research Trainee**
Chia Tai Seeds Company (chiataiseed.com)
Thailand
- Trained in cultivation, management, and breeding techniques for various vegetable crops at three research stations in different parts of Thailand.
- Jan 2012*
to
Jun 2012
- Undergraduate Intern/Research Assistant**
Zakharov Lab (website)
Department of Plant Sciences - University of California, Davis
- Project aimed at understanding the molecular pathways underlying aroma compound synthesis in cantaloupes. Responsibilities included: Tissue culture, DNA & RNA isolation, maintaining plants in the greenhouse, pollinating flowers, and harvesting fruit.
- Jan 2011*
to
Mar 2011
- Laboratory Assistant**
Department of Horticulture - Oregon State University
- Ornamental plant breeding program (Thuja species). Responsibilities included: Flow cytometry, laboratory and greenhouse management.
- Apr 2010*
to
Jun 2010
- Greenhouse Technician**
Department of Horticulture - Oregon State University
- Hazelnut breeding program. Responsibilities included: transplanting operations, and setting up drip irrigation systems.

Involvements

- Web Master, Graduate Group in Horticulture & Agronomy (website)
- Outreach Coordinator, Graduate Group in Horticulture & Agronomy
- Organizing Committee Member, 2016 UCD Plant Breeding Symposium
- Organizing Committee Chair, 2017 UCD Plant Science Symposium
- Web Design, UCD Plant Science Symposium (plantsciencesymposium.ucdavis.edu)