

Rangel Daroya

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EDUCATION

University of Massachusetts, Amherst, MA, USA

Ph.D. Computer Science (GPA: 4.00/4.00), September 2022 – May 2027 (expected)

- Exploring and understanding relationships between computer vision tasks, including multi-task and transfer learning, to effectively solve computer vision problems in multi-modal applications (e.g., text, images).
- Developing improved data representations and embeddings to drive robust, generalizable models for large-scale real-world applications in environmental and scientific domains. [Advisor: Subhransu Maji]

University of the Philippines, Quezon City, Philippines

M.S. Electrical Engineering (GPA: 3.95/4.00), January 2018 – July 2020

- Focused on 3D reconstruction of objects and buildings.(Thesis: “*REIN: Flexible mesh generation from point clouds*” [[paper](#)])

B.S. Electronics and Communications Engineering (GPA: 3.89/4.00), June 2012 – June 2017

- Summa Cum Laude & Top 2 in the entire university (3,000+ students).

PUBLICATIONS (Full updated list: [Google Scholar](#))

1. **SuperRivolution: Fine-Scale Rivers from Coarse Temporal Satellite Imagery** [[paper](#)]
IEEE/CVF Winter Conference on Applications of Computer Vision (WACV), 2026. (to appear)
Rangel Daroya, Subhransu Maji.
2. **RiverScope: High-Resolution River Masking Dataset** [[paper](#)]
Association for the Advancement of Artificial Intelligence (AAAI), 2026. (to appear)
Rangel Daroya, Taylor Rowley, Jonathan Flores, Elisa Friedmann, Fiona Bennett, Heejin An, Travis Simmons, Marissa Jean Hughes, Camryn Kluetmeier, Solomon Kica, J Daniel Vélez, Sarah Esenther, Thomas Howard, Yanqi Ye, Audrey Turcotte, Colin Gleason, Subhransu Maji.
3. **WildSAT: Learning Satellite Image Representations from Wildlife Observations** [[paper](#)]
IEEE/CVF International Conference on Computer Vision (ICCV), 2025. ([Spotlight Talk, CV4E Workshop @ ICCV](#))
Rangel Daroya, Elijah Cole, Oisin Mac Aodha, Grant Van Horn, Subhransu Maji
4. **Improving Satellite Imagery Masking using Multi-task and Transfer Learning** [[paper](#)]
IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing (JSTARS), 2025.
Rangel Daroya, Luisa Lucchese, Travis Simmons, Punwath Prum, Tamlin Pavelsky, John Gardner, Colin Gleason, Subhransu Maji.
5. **T-SAM: Transductive Learning for Segment Anything Model** [[paper](#)]
IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshops (CVPRW), 2025.
Rangel Daroya, Deepak Chandran, Subhransu Maji, Andrea Fanelli.
6. **Task2Box: Box Embeddings for Modeling Asymmetric Task Relationships** [[paper](#)]
IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2024. ([Highlight, 11.9% of CVPR24 papers](#))
Rangel Daroya, Aaron Sun, Subhransu Maji.
7. **COSE: A consistency-sensitivity metric for saliency on image classification** [[paper](#)]
IEEE/CVF International Conference on Computer Vision Workshops (ICCVW), 2023.
Rangel Daroya*, Aaron Sun*, Subhransu Maji. (* means equal contribution)
8. **REIN: Flexible mesh generation from point clouds** [[paper](#)]
IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshops (CVPRW), 2020.
Rangel Daroya, Rowel Atienza, Rhandley Cajote.
9. **Alphabet sign language image classification using deep learning** [[paper](#)]
IEEE Region 10 Conference (TENCON), 2018.
Rangel Daroya, Daryl Peralta, Prospero Naval.
10. **NDVI image extraction of an agricultural land using an autonomous quadcopter with a filter-modified camera** [[paper](#)]
IEEE International Conference on Control System, Computing and Engineering (ICCSCE), 2017.
Rangel Daroya, Manuel Ramos.

WORK EXPERIENCE

University of Massachusetts, Amherst, MA, USA

Research Assistant, September 2022 – Present

- Develop and train novel computer vision models for environmental and scientific applications, regularly processing and analyzing terabytes of data.

- Authored a global model of rivers for hydrological analysis, set for deployment to the [NASA PO.DAAC](#) open-source data archive for ocean and climate data.

AngioInsight, Minnetonka, MN, USA

Engineering Intern (Part-time), June 2025 – August 2025

- Explored and implemented spatiotemporally dynamic segmentation algorithms for angiograms in medical applications.

Dolby Laboratories, San Francisco, CA, USA

Ph.D. Research Intern, May 2024 – August 2024

- Developed novel methods to explore task relationships, improving ML model performance and data efficiency.
- Resulted in a first-author [paper](#) published at CVPRW 2025 on transductive learning for segmentation models.

Thinking Machines Data Science, Taguig, Philippines [<https://thinkingmachin.es/>]

Team Lead & Machine Learning Researcher, February 2020 – January 2022

- Led development of a predictive model that resulted in a \$2 million project with a major telecommunications company.
- Designed and deployed cloud-native data analytics applications (backend and DevOps), performing analysis on terabytes of data for an investment firm with >\$300 billion in assets under management.
- Tech Stack: Python, FastAPI, Red Hat OpenShift, Amazon Elastic Kubernetes Service, Elasticsearch, Kibana, Grafana, RedisGraph, PostgreSQL, Dagster, and CloudBees Jenkins.

University of the Philippines, Quezon City, Philippines

University Researcher III, May 2018 – January 2020

- Conducted research for the Philippine California Advanced Research Institutes (PCARI) “AIRSCAN” project in collaboration with the University of California Berkeley.
- Proposed and implemented 3D reconstruction algorithms, achieving >80% improvement over baseline methods and resulting in a research [paper](#).
- Designed a customized algorithm for 3D semantic building map augmentation, resulting in a [patent](#).

TEACHING EXPERIENCE

University of the Philippines, Quezon City, Philippines

Senior Lecturer, August 2021 – August 2022

Lecturer 2, January 2018 – July 2021

- Taught and organized undergraduate courses on circuit design, telecommunications, and MATLAB/Python programming.

De La Salle University, Manila, Philippines

Lecturer, March 2022 – August 2022

- Taught and organized undergraduate courses on energy conversion, AC/DC motor operation, and machine learning basics.

HONORS AND AWARDS

- PhD Portfolio Distinction from University of Massachusetts, Amherst (2024)
 - Awarded to select PhD students meeting a high standard of completion, voted by faculty.
- Paul Utgoff Memorial Graduate Scholarship in Machine Learning from University of Massachusetts, Amherst (2023)
 - Competitive scholarship awarded to a first-year graduate student in Machine Learning.
- ICCV Travel Grant for Broadening Participation (2025)
- CVPR Travel Grant for inclusion (2024)
- Oblation Scholar at University of the Philippines (2012-2017)
 - Prestigious full scholarship given to the top 50 of 60,000+ university applicants.

PATENT

- Semantic Three-dimensional (3D) Building Augmentation**, PH12021050443 (2025). Inventors: Shakira Arguelles, Ferdinand John Briones, Izza Claire Jalandoni, Wonkyun Park, Jonric Mirando, James Carl Necio, Raimarc Dionido, Rowel Atienza, Soonyoung Lee, [Rangel Daroya](#), Daryl Peralta.

PROFESSIONAL ACTIVITIES

- Program committee, New England Computer Vision (NECV) Workshop 2025 [[page](#)]
- Co-organizer, Machine Learning and Friends Lunch (MLFL), University of Massachusetts, Amherst (2024 – present) [[page](#)]
 - MLFL is a weekly interactive forum at the university where we invite industry researchers and faculty to talk about their field of expertise
- Mentor, Early Research Scholars Program for undergraduates, University of Massachusetts, Amherst (2024 – present)
- Ph.D. Application Reviewer, University of Massachusetts, Amherst (2023, 2024)
- Reviewer for IJCV 2024, ECCV 2024, CVPR 2025, ICCV 2025, NeurIPS 2025, AAAI 2026
- Mentor, GradMAP Philippines for STEM career mentorship (2022-2024) [[page](#)]

SKILLS

- Programming Languages: Python, MATLAB, C/C++
- Machine Learning and Data Science: PyTorch, PyTorch-lightning, Tensorflow, scikit-learn, NumPy, Pandas, SciPy
- Others: Remote Sensing, Multispectral Images, Software Environment Management, Shell Scripting, High Performance Computing (HPC), multi-GPU training, Git, Docker, LaTeX, QGIS