

Ivan Zvonkov
Curriculum Vitae
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EXPERIENCE

- 2021 - Present* **Machine Learning Engineer**, NASA Harvest - College Park, MD
Researching and deploying machine learning systems using remote sensing data for agriculture. Supervised by Dr. Hannah Kerner & Dr. Catherine Nakalembe.
- 2020 - 2021* **Data Scientist**, TradeSun - San Diego, CA
Developed data and machine learning pipelines for Trade Finance automation.
- 2018 - 2019* **Software Engineering Intern**, IBM - Markham, ON
Full stack software development on the Digital Business Automation team.

EDUCATION

- 2021 - 2023* **M.S. Computer Science**, University of Maryland, College Park
Thesis: "Usable Machine Learning for Remote Sensing Data"
- 2015 - 2020* **B.E. Software Engineering**, University of Western Ontario
Capstone: "Forestcasting - Forest fire prediction powered by analytics"

PUBLICATIONS

- Kerner, H., Nakalembe, C., Yeh, B., **Zvonkov, I.**, Skakun S., Becker-Reshef, I., McNally, A. (2023). Satellite Data Shows Resilience of Tigrayan Farmers in Crop Cultivation During Civil War. Preprint.
- Kerner, H., Nakalembe, C., Yang, A., **Zvonkov, I.**, McWeeny, R., Tseng, G., and Becker-Reshef, I. (2023). How accurate are existing land cover maps for agriculture in Sub-Saharan Africa? Preprint.
- Tseng, G.*, Cartuyvels, R., **Zvonkov, I.**, Purohit, M., Rolnick, D., and Kerner, H (2023). Lightweight, Pre-trained Transformers for Remote Sensing Timeseries. NeurIPS Climate Change AI Workshop.
- Zvonkov, I.** (2023) Usable Machine Learning for Remote Sensing Data. University of Maryland, College Park ProQuest Dissertations.

Zvonkov, I., Tseng, G., Nakalembe, C., Kerner, H. (2023). OpenMapFlow: A Library for Rapid Map Creation with Machine Learning and Remote Sensing Data. AAAI Conference on Artificial Intelligence, AI for Social Impact.

Tseng, G., **Zvonkov, I.**, Nakalembe, C., Kerner, H. (2021). CropHarvest: a global satellite dataset for crop type classification. NeurIPS Datasets and Benchmarks, <https://openreview.net/pdf?id=JtjzUXPEaCu>

SELECTED TALKS

1. OpenMapFlow: Rapid Map Creation with Machine Learning and Earth Observation, AGU 2022.
2. CropHarvest: a global satellite dataset for crop type classification, Living Planet Symposium 2022.
3. Helmets Labeling Crops: Obtaining large datasets through citizen-science. Living Planet Symposium 2022 (with Dr. Catherine Nakalembe)
4. “NASA Harvest’s Cropland Mapping Module”, presented to several partner organizations, <https://www.youtube.com/watch?v=85da2hZqobA>
5. “Data Efficient Land Classification Models”, AMLD Africa 2021 (with Gabriel Tseng)

OTHER ACTIVITIES

- 2023 Organizer, Workshop on Machine Learning for Remote Sensing, ICLR 2023. <https://nasaharvest.github.io/ml-for-remote-sensing/iclr2023>
- 2022 Lead Instructor, Scalable Cropland Mapping (4 day workshop), University of Maryland 2022. <https://nasaharvest.github.io/rcmrd2022.html>
- 2022 Organizer & Instructor, Tutorial on Machine Learning for Remote Sensing: Agriculture and Food Security, IEEE CVPR 2022. <https://nasaharvest.github.io/cvpr2022.html>
- 2022 Panelist, Localizing AI at SatSummit 2022
- 2020 Contributor, Towards Data Science
- 2018 President, Engineering Student Societies’ Council of Ontario

HONORS & AWARDS

- 2020 Winner of the Ontario Software Engineering Capstone Projects Competition
- 2019 Institute of Electrical and Electronics Engineers Inc. I.E.E.E. Award (UWO)
- 2019 The Parents Fund Award in the Faculty of Engineering
- 2019 IBM Manager’s Choice Award
- 2017 Steinmetz-Woonton Scholarship
- 2017 MacKay-Lassonde Award in Computer Engineering
- 2015 The Western Scholarship of Excellence