

Christian Joseph Abys

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Education

University of Maryland

Expected 2023/24

Ph.D. Geographical Sciences & Remote Sensing

- Professor/Advisor: Dr. Sergii Skakun
- Funded and directed by NASA

Boston University

2019-2020

M.S. Environmental Remote Sensing & Geospatial Sciences

- Projects: ML Predictive Forest Cover Change, Distributed Solar Energy Grid Modeling

University of Vermont

2015 - 2019

B.S. Environmental Science

- Rubenstein School of Environment and Natural Resources (RESNR)
- Concentration: Environmental Data Assessment & Analysis || Minor: Geospatial Technologies

Professional Experience

University of Maryland

August 2021 - Present

Graduate Researcher, Department of Geographical Sciences

- Under supervision of Dr. Sergii Skakun
- Satellite remote sensing acquisition and analysis for crop modeling, forecasting and mapping
- Current research on Eastern European agriculture including change detection of cropland expansion, yield forecasting, and cropland intensification (Two papers in progress)

Indigo Agriculture

January 2020 – August 2020

Geospatial Analyst Intern, Data Innovation Team

- Identify and acquire spatial datasets from municipal, state, federal, and commercial sources and integrate into a unified data platform
- Create maps and visualizations for key stakeholders and decision makers within the organization
 - DEM of select research farmland for topography and hydrology analysis
 - Grain supply infrastructure research
 - COVID-19 mapping and visualization to provide intelligence
- Conduct geospatial analysis to discover trends and insights in agricultural datasets

Vermont Energy Investment Corporation

May 2019 – August 2019

Energy Engineer Intern

- Conduct technical, market and regulation research to understand viability of utilizing dairy farm waste to produce combined heat and gas via biodigesters
- Use of Python, R, E-Star, and ArcGIS Pro to process and analyze big data for hotspot location-allocation analysis and energy grid modeling
- Presented research and deliverables to department directors at company symposium

Spatial Analysis Laboratory, University of Vermont

October 2018 – May 2019

Geographic Information Systems Technician

- Edited, classified and processed satellite/aerial imagery datasets via ArcGIS Pro
- Reviewed and corrected errors in LiDAR, NAIP, and Ortho datasets
- Reviewed coworkers image analysis to ensure quality control

West Street Parcel Land Management

September 2018 – December 2018

Senior Capstone Project || Vermont Agency of Natural Resources

- Developed a 30-year comprehensive land management plan that will reforest a plot of land with native Pitch Pine and Oak species for the Vermont Agency of Natural Resources
- Devised a realistic, cost-effective reforestation plan with state foresters and scientists
- Used GIS to generate a map of the area to assist in understanding the reforestation area
- Analyzed soil data including moisture content and acidity to determine planting feasibility

Aiken Forestry Science Laboratory (RESNR)

May 2018 – August 2018

Laboratory Research Intern

- Executed lab procedures such as KCl extractions and pH analysis of soil samples
- Measured moisture and nutrient contents of soils

Sail Caribbean, British Virgin Islands, Tortola

Operations Manager

May 2021 – August 2021

- Adventure Sailing/Diving Camp; manager promotion after first tour
- Organized daily camp schedules/logistics for 150 campers
- Managed 75+ staff including 3 direct reporting staff members
- Inventory and order supplies from local stores and suppliers

Operations Staff

May 2017 – August 2017

Nature Conservancy, Block Island, RI

June 2013- August 2013

Field Technician-Rhode Island Chapter

- Assisted Yale graduate students studying the presence of Lyme Disease in tick populations
- Searched for and counted Piping Plover nesting sites; Conducted soil erosion survey
- Extensive removal of invasive species and water-quality sampling

Skills, Certifications & Coursework

- Languages: R, Python, SQL
- Software: Scikit-learn, Tensor flow, GDAL, Marxan, QGIS, ArcGIS Business Analyst, Microsoft Office, ESRI ArcGIS Pro, Imagine ERDAS, Carto, PostgreSQL, Google Earth, Matplotlib, GeoPandas
- Wilderness First Responder (2018), PADI Rescue Diver Certified (2017)
- *Relevant Coursework:* Spatial Data Analysis, Physical Models of Remote Sensing, Multivariate Statistical Analysis, Python Information Structures, Environmental Engineering, Pollution Mechanics, Applied Environmental Risk Analysis, Advanced Geospatial Techniques, Remote Sensing of Natural Resources, Global Deforestation and Commodity Chains

Academic Positions, Leadership, & Awards

Graduate Research Assistant, University of Maryland

August 2021 - Present

- Russian Winter Wheat Expansion

World Regional Geography, Boston University

Fall of 2019/2020

Teaching Assistant – Discussion Leader

- Lead discussion groups on various topics concerning the various institutions that shape our modern world
- Manage class and coursework for 40 students via office hours and Blackboard

Natural History & Field Ecology, University of Vermont

Spring of 2018

Teaching Assistant – Laboratory Leader

IGARRS 2022 Symposium

Spring of 2022

Investigative Paper Reviewer

2021 Carolina Data Hackathon, University of North Carolina at Chapel Hill

September 2021

- 1st Place Winner
- Developed ML model that predicted the CDC's Social Vulnerability Index at the town-scale level.
- Built a hurricane risk index and integrated it with the CDC's Social Vulnerability Index to measure the impact of major hurricanes on communities along the eastern seaboard of the United States.