



Vernice Marie Santiago

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Home: 3020 Meycauayan City (Philippines)

Other: 5020 Salzburg (Austria)

ABOUT ME

Geospatial Specialist with a strong foundation in GIS, remote sensing, and data analysis. Graduated with a degree in Geodetic Engineering from the University of the Philippines Diliman, with research experience in 3D city modeling and interdisciplinary geospatial projects. Skilled in leveraging advanced geospatial tools, programming languages, and open-source software to address real-world challenges using aerial and satellite imagery, airborne LiDAR, and field observation data. Driven by a passion for innovation and utilizing free and open data to develop sustainable geospatial solutions.

EDUCATION AND TRAINING

Copernicus Master in Digital Earth - Geovisualization and Geocommunication

Palacký University Olomouc [Sep 2026 – Aug 2027]

City: Olomouc | Country: Czechia | Website: <https://master-cde.eu/> | Level in EQF: EQF level 7

The second academic year will specialize in geovisualisation, geocommunication and application development, including cartography and geovisualisation design, web and cognitive cartography, 3D visualisation, and advanced visualisation methods.

Copernicus Master in Digital Earth - Geoinformatics and Earth Observation

Paris-Lodron Universität Salzburg [Sep 2025 – Aug 2026]

City: Salzburg | Country: Austria | Website: <https://master-cde.eu/> | Level in EQF: EQF level 7

The first academic year includes modules on Orientation Project, Space-Time Models & Representations, Digital Earth Observation & Technologies, Spatial Image Analysis, and Integrated Applications which provide profound Earth Observation and Geoinformatics application-oriented expertise based on relevant theories and methods.

Bachelor of Science in Geodetic Engineering

University of the Philippines Diliman [16 Jan 2017 – 25 Jul 2021]

City: Quezon City | Country: Philippines | Website: <https://upd.edu.ph/> | Field(s) of study: Engineering, manufacturing and construction | Level in EQF: EQF level 6 | Thesis: Semi-Automatic Generation of an LOD1 and LOD2 3D City Model of Tanauan City, Batangas Using OpenStreetMap and Taal Open LiDAR Data in QGIS

- Geographic Information Systems and Digital Cartography
- Remote Sensing and Modern Photogrammetry
- Object-Oriented Programming for Geospatial Applications
- Geodesy, Reference Systems and Reference Frames, Earth's Gravity and Geoid Modelling, Satellite Positioning Systems
- Mathematical Methods and Adjustment Computations for Spatial Data Analysis
- General/Construction and Industrial/Hydrographic/Land Surveying, Geodetic Control Network, Land Development and Valuation
- Laws on Natural Resources, Land Registration Law, and Contracts, Surveying Laws, and Ethics

HONOURS AND AWARDS

OeAD - Austria's Agency for Education and Internationalisation

Erhard Busek Scholar October 2025 - September 2027

- The Erhard Busek Grant is an Austrian excellence scholarship that offers full funding for highly qualified graduates from specific non-European developing countries to complete a two-year Master's degree in Austria, primarily in STEM fields.

Remitly, Inc. USA

Remitly Scholar Second semester 2018-2019, First semester 2019-2020, Second semester 2019-2020, Second semester 2020-2021

- Awarded the Remitly Scholarship in the Philippines, recognizing academic excellence and leadership potential. The program supports students in their pursuit of higher education and career development, empowering them to drive positive social impact.

Link: <https://blog.remitly.com/global-community/scholars-program-in-philippines/>

University of the Philippines Diliman

College Scholar 2nd Semester AY 2017-2018, 1st Semester AY 2018-2019

- Awarded the Honorific Scholarship for achieving a weighted average between 1.45 and 1.75 at the end of the semester.

PUBLICATIONS

[2021]

Semi-Automatic Generation of an LOD1 and LOD2 3D City Model of Tanauan City, Batangas Using OpenStreetMap and Taal Open LiDAR Data in QGIS This study highlights the use of free and open-source software (FOSS) to generate LOD1 and LOD2 3D city models for urban planning, disaster mitigation, and environmental monitoring in the Philippines. Using OpenStreetMap and Taal Open LiDAR data, a GIS-based workflow achieved 70.66% LOD1 and 55.87% LOD2 reconstruction accuracy. The results show that the efficient generation of 3D models using open data and GIS-based algorithms is feasible, with height errors within CityGML standards and low computational requirements.

Camacho, P. H. T., Santiago, V. M. R., and Sarmiento, C. J. S., 2021, Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci., XLVI-4/W6-2021, 77-84

WORK EXPERIENCE

Propeller Aero – Sydney, Australia

Website: <https://www.propelleraero.com/> | Email address: vernice.santiago@propelleraero.com.au | Name of unit or department: Data Success Team

Geospatial Specialist

[17 Jan 2024 – Current]

- Processing photogrammetric and LiDAR data into accurate 3D topographic maps by interpreting drone and GPS survey data, using GIS software and web-based platforms, and ensuring quality through automated and manual checks.
- Providing technical assistance to customers with data capture and/or output issues and collaborating across the global team in delivering high-quality support

First Balfour, Inc. – Parañaque City, Philippines

Website: <https://firstbalfour.com/> | Name of unit or department: Technical Services Department

Geodetic Engineer - Management Trainee

[Feb 2022 – Aug 2023]

Management Trainee (February 2022 - August 2023):

- Participated in the Junior Management Training Program, gaining a holistic understanding of the construction industry through exposure to departmental functions, corporate business operations, and site operations in four core markets: Power & Energy, Water Infrastructure, Transport Infrastructure, and High-Value Buildings.

Procurement Specialist - Geodetic and Geotechnical Works (March 2023 - August 2023):

- Managed sourcing and contracting for technical services and materials, coordinated vendor negotiations, and prepared documentation for purchase orders in SAP.
- Coordinated with vendors for price quotations across various construction projects and assessed vendor qualifications.
- Strengthened relationships with vendors and improved procurement efficiency through master service agreements.
- Prepared monthly reports on commodity price trends and savings.

Geodetic Engineer (February 2022 - February 2023):

- Conducted various surveys (construction layout, topographic, control, etc.) across five project sites in the Philippines.
- Prepared survey data, maps, and documentation to ensure accuracy and meet client requirements.
- Created maps using GIS software for data visualization and analysis.
- Developed an inventory tracking system for survey equipment and managed procurement, rental, and maintenance of equipment.

 **UP Training Center for Applied Geodesy and Photogrammetry** – Quezon City, Philippines

Website: <https://upcgrd.wixsite.com/cgrd/projects>

University research assistant

[Sep 2020 – Jan 2021]

Improvement of the Satellite-based Modular Mapping and Assessment System for Rice Production in the Philippines (MaPalay II)

- Conducted quality control and quality assurance tests to validate rice classification results from the MaPalay plugin.
- Automated the extraction of satellite data parameters from processed Sentinel-2 satellite images using Python.
- Wrote a comprehensive review of existing rice mapping studies in other tropical countries.
- Designed training materials for the implementing agency, the Department of Agriculture (DA)- Philippine Rice Research Institute (PhilRice).

 **UP Training Center for Applied Geodesy and Photogrammetry** – Quezon City, Philippines

Website: <https://upcgrd.wixsite.com/cgrd/projects>

University research assistant

[Jun 2019 – Jul 2019]

Digital Imaging for Monitoring and Assessment for National Greening Program and Irrigation Networks

- Researched satellite data for forest assessment and applications.
- Designed training materials for the implementing agency, the Department of Budget and Management.
- Created promotional materials and presented project innovations at the Department of Science and Technology's National Science and Technology Week 2019.

 **Office of the College Secretary, College of Social Sciences and Philosophy** – Quezon City, Philippines

Website: <https://kssp.upd.edu.ph/>

Student Assistant

[Aug 2018 – Dec 2018]

- Responsible for encoding student records from paper documents into a digital database for improved accessibility.
- Assisted in day-to-day office tasks, including preparing and processing document requests for students, ensuring timely and accurate service.

RECOMMENDATIONS

Name: Dr. Czar Jakiri Sarmiento | Thesis Adviser

Deputy Executive Director, UP National Engineering Center

Associate Professor and Former Chairman, UP Department of Geodetic Engineering

Former Director, UP Training Center for Applied Geodesy and Photogrammetry (UP TCAGP)

Founder and Managing Director, Research and Development Laboratory for Computational Geodesy (CGRD Lab)

- A leading expert in geospatial technologies, reference systems, and advanced geodetic studies. Served as my thesis adviser, professor for the Reference Systems and Reference Frames course, and director of the UP TCAGP during my research assistantship for three geospatial projects.

Email: cssarmiento@up.edu.ph

Links: <https://www.linkedin.com/in/czarjakirisarmiento/> | <https://scholar.google.com/citations?user=Bwv1WzQAAAJ>

Name: Jann Russell Manzano | Supervisor

Geospatial Supervisor, Propeller Aero

- A skilled geospatial professional with expertise in advanced GIS tools, photogrammetry, LiDAR processing, and remote sensing applications. Provided mentorship and guidance in handling complex geospatial datasets, enhancing my technical proficiency and problem-solving skills.

Email: jann.manzano@propelleraero.com.au

Link: <https://www.linkedin.com/in/jann-russell-manzano-75813b155/>

LANGUAGE SKILLS

Mother tongue(s): Filipino

Other language(s):

English

LISTENING C2 READING C2 WRITING C2

SPOKEN PRODUCTION C2 SPOKEN INTERACTION C2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

SKILLS

GIS and Mapping Software

QGIS (Advanced level) / ArcGIS Desktop/Pro (advanced) / Autodesk Civil3d / Google: Google Earth Pro

Photogrammetry and Remote Sensing Software

Agisoft Megashape Professional / PIX4D / SNAP (SeNtinel Applications Platform) / ENVI (Environment for Visualizing Images) / Cloud Compare (3D point cloud processing) / LASTools / DJI Terra / WingtraHub

Programming Languages

Python / C Language / SQL and MS-SQL / Beginner JavaScript for Web Development / Web Technologies Fundamentals - HTML, CSS

Surveying Instruments

Survey equipment(GPS, Level, Theodolite & Total station) / LIDAR, Photogrammetry, and UAV sensors and platforms

Graphic Design Software

Adobe Photoshop / Adobe Illustrator / Adobe InDesign / Adobe Lightroom

Documentation Software

Microsoft Excel / Microsoft Word / Microsoft Powerpoint / Google Suite (Doc, Slides, Form, Sheet, Drive)

NETWORKS AND MEMBERSHIPS

[Jun 2019 – Jul 2021] Quezon City, Philippines

Research and Development Laboratory for Computational Geodesy The Research and Development Laboratory for Computational Geodesy (CGRD) is an affiliate research laboratory of the UP Department of Geodetic Engineering and the UP Training Center for Applied Geodesy and Photogrammetry. Formally established in 2020, CGRD specializes in geospatial technologies, computational geodesy, and innovative geodetic solutions. During my undergraduate studies, I contributed to CGRD as a research assistant, working on remote sensing, geospatial solutions, and advanced geodetic applications across various projects.

Link: <https://upcgrd.wixsite.com/cgrd/clients>

[Apr 2014 – Jul 2021] Quezon City, Philippines

UP Circle of Engineering Students (UP CREST) The UP Circle of Engineering Students (UP CREST) is an engineering-wide student organization that provides a training environment for aspiring engineers, fostering interdisciplinary collaboration and promoting campaigns for social awareness. The organization engages in initiatives that prepare members for leadership and technical challenges while encouraging a sense of social responsibility. I had the privilege of holding positions on the executive committee of the organization, first as Vice President for Membership and Recruitment from 2016 to 2017, and later as President from 2019 to 2021.

Link: <http://www.up-crest.org/>

[May 2015 – Jul 2021] Quezon City, Philippines

Philippine Society of Youth Science Clubs The Philippine Society of Youth Science Clubs (PSYSC) is the largest youth science organization in Asia and the only national federation of youth science clubs in the Philippines. As a non-profit organization established in 1971, it promotes scientific interest and consciousness among Filipino youth through activities like science camps, leadership training, and environmental initiatives. During my undergraduate years, I was a member of the National Executive Council Assistance Team (NECAT), where I contributed to organizing nationwide events and programs aimed at fostering youth engagement in science and innovation.

Link: <https://www.facebook.com/psysc.inc/>

[Aug 2017 – Jul 2021] Quezon City, Philippines

UP Alliance for Responsive Involvement and Student Empowerment (UP ARISE) The UP Alliance of Responsive Involvement and Student Engagement (UP ARISE) is a university-wide, student-led organization committed to fostering social responsibility, leadership, and community engagement among its members. As a member, I actively participated in organizing projects and events that promoted youth involvement in addressing social issues, advocating for sustainable development, and contributing to nation-building.

Link: <https://www.facebook.com/up.arise/>

[Jun 2018 – Jul 2021] Quezon City, Philippines

UP Photography Society (UP OPTICS) The UP Photography Society (UP OPTICS) is a student organization dedicated to nurturing and developing photography skills through workshops, photo walks, and event coverage. As a member, I contributed to organizing photography events and participated in initiatives that promoted creativity and visual storytelling within the university.

Link: <https://www.facebook.com/upoptics/>

[Jul 2018 – Jul 2021] Quezon City, Philippines

Engineers Without Borders – UP Diliman Engineers Without Borders – UPD (EWB-UPD) is a student-led organization that focuses on providing sustainable engineering solutions to marginalized communities through various local and international projects. As a member of the HR Committee, I contributed to recruiting and managing members, ensuring effective coordination and engagement to support the organization's mission and projects.

Link: <https://ewbupd.wixsite.com/home>

[Aug 2018 – Jul 2021] Quezon City, Philippines

UP Bridge Club UP Bridge Club is an organization dedicated to promoting the game of Bridge and supporting the growth of its players. As a member of the Secretariat Committee, I contributed to creating publicity and promotional materials to raise awareness and engage the university community in the club's activities.

Link: <https://www.facebook.com/upbridgeclub/>

CONFERENCES AND SEMINARS

[28 Oct 2024 – 27 Nov 2024] Friedrich Schiller University Jena

Introduction to Remote Sensing and Hands-On Disaster Management Applications Participated in a blended learning course on Remote Sensing and Disaster Management Applications, organized by Friedrich Schiller University Jena as part of the SpaceSUITE Project. The course focused on utilizing remote sensing for disaster management, specifically flood mapping using Sentinel data in SNAP, and combined foundational Earth Observation skills with live training for professionals in natural hazard risk assessment.

Link: <https://www.spacesuite-project.eu/2024/10/24/learning-course-on-remote-sensing-and-disaster-management-applications/>

[28 Oct 2024 – 26 Nov 2024] EO College, European Space Agency

Land In Focus - Basics of Remote Sensing Land in Focus – Basics of Remote Sensing is an online course that introduces the fundamentals of remote sensing technology and its applications for land surface analysis. The course covers the theoretical principles of remote sensing, image analysis techniques, and data processing, providing the tools to address real-life challenges through remote sensing solutions.

Link: <https://eo-college.org/courses/landinfo/>

[13 Nov 2024 – 15 Nov 2024] University of the Cordilleras

Geomatics for Disaster Risk Reduction and Climate Change Adaptation Masterclass The *Geomatics for Disaster Risk Reduction and Climate Change Adaptation Masterclass* featured speakers from Southeast Asia, European academic institutions, and local government partners. The event focused on using geomatics and geospatial technologies to enhance disaster risk reduction and climate adaptation efforts, with the overarching goal of promoting safer communities and a sustainable environment.

Link: <https://geodrr.eu/consortium/university-of-the-cordilleras-uc-philippines/>

[15 Aug 2024 – 16 Aug 2024] ASEAN Federation of Land Surveying and Geomatics & Geodetic Engineers of the Philippines, Inc.

17th South East Asia Survey Congress The 17th South East Asia Survey Congress (SEASC) 2024, organized by ASEAN FLAG and GEP, gathered professionals in surveying and geospatial technology. It featured discussions on

advancements, challenges, and solutions, with technical sessions and networking opportunities. It aimed to promote collaboration and knowledge-sharing among experts in the region.

Link: <https://aseanflag.org/event/the-17th-south-east-asia-survey-congress-seasc-2024/>

[7 Mar 2022] Foundation for Economic Freedom

Drone-Supported Survey in the Philippines The *Drone-Supported Survey in the Philippines* training module, developed under the Technology for Property Rights Project, focuses on using drone-based technology for efficient land surveying and mapping. The training equips participants with skills in drone operation, data processing, and integration into land administration systems, promoting transparency and sustainable land use.

Link: <https://fef.org.ph/wp-content/uploads/2023/04/TPR-Project-Brief-2020.pdf>

[17 Nov 2021 – 19 Nov 2021] UP Department of Geodetic Engineering & UP Training Center for Applied Geodesy and Photogrammetry

Philippine Geomatics Symposium 2021 At the Philippine Geomatics Symposium 2021, I, along with my thesis partner, presented the research paper *Semi-Automatic Generation of an LOD1 and LOD2 3D City Model of Tanauan City, Batangas Using OpenStreetMap and Taal Open LiDAR Data in QGIS*. This research was published in *ISPRS Volume XLVI-4/W6-2021*, 2021, focusing on utilizing OpenStreetMap and LiDAR data to generate 3D city models.

Link: <https://easychair.org/cfp/philgeos2021>

[22 Sep 2021 – 30 Sep 2021] Singapore University of Technology and Design & Temasek Foundation

Aviation Forum 2021 The Aviation Forum 2021 included a 3-part program: a drone theory and workshop, design innovation workshop, and an industry sharing segment. The drone workshop involved FPV drone lessons, a figure-8 challenge, and a virtual race through Singapore's Marina Bay Sands area. The event brought together participants from Southeast Asia, blending virtual and physical elements to foster interaction and learning.

Link: <https://www.designinnovation.sg/blogs/reimagining-hands-on-learning-over-the-internet>

[10 Apr 2021 – 24 Apr 2021] Ateneo Consultants for Organization Development and Empowerment

XChange 2021: Reimagine. Redesign. Co-Create. XChange is an organizational development seminar for youth leaders focused on driving positive societal change. As a delegate from UP CREST, I participated in the systems design track, where we evaluated current organizational practices and ideated new solutions to improve efficiency.

Link: <https://sites.google.com/view/ateneo-code/our-projects/xchange?authuser=0>

[16 Oct 2020 – 10 Dec 2020] IEEE Geoscience & Remote Sensing Society, International Society for Photogrammetry & Remote Sensing

Young Professional & Student Consortium Summer School The Young Professional & Student Consortium Summer School covered topics such as UAV remote sensing, hyperspectral remote sensing applications in Earth observation, and the use of hyperspectral imaging in agriculture and forestry. This event brought together professionals and students to explore cutting-edge technologies and their real-world applications.

Link: <https://www.ieee.org.br/news-item/2020-ieee-grss-isprs-young-professional-student-consortium-summer-school/>

[4 Dec 2020 – 5 Dec 2020] Institute for Advanced Studies

Symposium on Remote Sensing of Defense Applications – SERFA 2020 The 10th edition of the Symposium on Remote Sensing of Defense Applications (SERFA 2020) focused on the theme "Rethinking the Future of Remote Sensing," with discussions on geoscience applications for security, defense, and urban mobility. Topics included analytics for change detection, entrepreneurship, GEOBIA for high-resolution images, and scientific writing skills.

Link: https://www.even3.com.br/serfa2020_youngpro_summerschool/

[10 Sep 2020] Engineers Without Borders Philippines

Human-Centered Design and Engineering The Engineers Without Borders-Philippines Webinar Series No. 3, titled "Human-Centered Design and Engineering," covers topics on "Global Responsible Engineering" and "Human-

Centered Product Development." These sessions emphasize how engineering practices can address global challenges and prioritize human-centric solutions.

Link: <https://www.facebook.com/EWB.PH>

[26 Feb 2020 – 8 Apr 2020] ESRI Training

Spatial Data Science: The New Frontier in Analytics This six-week course in spatial data science focused on using ArcGIS software to analyze geospatial data through machine learning, predictive modeling, and spatial algorithms. It provided hands-on experience in data preparation, space-time pattern mining, and object detection while integrating open data science tools. Participants also learned to communicate insights effectively through ArcGIS StoryMaps.

Link: <https://esrisingapore.com.sg/events-calendar/spatial-data-science-new-frontier-analytics#event-highlights>

VOLUNTEERING

[Jul 2021 – Nov 2021] University of the Philippines Diliman & Quezon City local government

Bakunahan sa Diliman: UP CHK - QC COVID19 Vaccination Site

Bakunahan sa Diliman, a vaccination drive held at the University of the Philippines Diliman, successfully administered COVID-19 vaccines to thousands of individuals. The initiative involved various stakeholders and aimed to promote vaccination within the local community. Volunteers contributed to the smooth execution of the event, ensuring efficient operations and supporting the health and safety efforts.

Link: <https://upd.edu.ph/bakunahan-sa-diliman-closes/>

MANAGEMENT AND LEADERSHIP SKILLS

President, UP Circle of Engineering Students (UP CREST)

Led a team of 8 Vice Presidents to achieve the objectives of a college-wide academic organization with 70 members. Reestablished the organization's direction by launching 7 new projects, while strengthening existing events and systems. This resulted in a 33% increase in membership, a 40% boost in finances, and enhanced engagement and exposure for all members.

Vice President for Membership and Recruitment, UP Circle of Engineering Students (UP CREST)

Led the recruitment efforts by developing and implementing strategies for member retention and recruitment, resulting in a 25% increase in membership.

Officer-in-Charge for the Ways and Means Committee, UP Alliance for Responsive Involvement and Student Empowerment (UP ARISE)

Spearheaded fundraising activities and income-generating projects, resulting in a 12% increase in the organization's finances.