Fernanda Careta Ventorim

PhD student in Computer Science, University of California Irvine (UCI), Irvine, CA, USA

↘ https://fventorim.github.io/ ✉ f.ventorim@uci.edu

Education

Ph.D. in Computer Science   **2024-Present**
University of California Irvine (UCI)   *Irvine/CA – USA* | GPA: 4.00/4.00
Advisor: Prof. Nalini Venkatasubramanian

M.Sc. in Computer Science   **2022-2024**
University of California Irvine (UCI)   *Irvine/CA – USA* | GPA: 3.79/4.00

M.Sc. in Urban Planning   **2018-2020**
Fluminense Federal University (UFF)   *Niterói/RJ – Brazil* | GPA: 9.73/10
Advisor: Prof. Vinicius M. Netto

B.Sc. in Architecture and Urban Planning   **2012-2016**
Brazilian College (Multivix)   *Vitória/ES – Brazil* | GPA: 8.38/10
Advisor: Prof. Renata Lóra

Research Interests

Data Science. Internet of Things. Smart Resilient Communities. Criminology.

Professional Experience

Ph.D. Student   **2024-Present**
Department of Computer Science, University of California, Irvine
Distributed Systems Middleware Group

M.Sc. Student   **2022-2024**
Department of Computer Science, University of California, Irvine

M.Sc. Student   **2018-2020**
Department of Urban Planning, Fluminense Federal University, Niteroi/RJ-Brazil
Vinicius M. Netto's Lab

Undergraduate Student Internship   **2015-2016**
Petrobras – Vitória/ES-Brazil
Assisted in developing and managing projects within civil construction and architectural design, contributing to the planning and execution phases.

Academic Experience

Graduate Teaching Assistant

Department of Computer Science, University of California, Irvine/CA
ICS32 - Programming with Software Libraries (Prof. Mustafa Ibrahim) | Fall, Summer, Spring 2023
ICS139W - Critical Writing (Prof. Mustafa Ibrahim) | Winter 2023
ICS31 - Introduction to Programming (Prof. Shannon Alfaro) | Fall 2022

Department of Urban Planning, Fluminense Federal University, Niteroi/RJ
Production and Management of Urban Land Use (Prof. Fernanda Furtado) | 2019

Undergraduate Learning Assistant

Department of Architecture and Urbanism, Brazilian College, Vitoria/ES
Environmental Comfort I (Prof. Aline Sauer) | 2015
Visual Arts (Prof. Dilma Góes) | 2012

Other Academic Activities

Assistant Editor for Urban Morphology Journal – ISSN 2182-7214 (2019-2021).
Graduate Student Representative (2018).
Certificate degree: Teaching and Management in Higher Education (2016-2017) - Research: *Between practice and teaching in Architecture and Urbanism* | GPA: 9.67/10.

Research Experience

Graduate Student Researcher – UCI   2024-Present

Project: "CareDEX: Enabling disaster resilience in aging communities via a secure data exchange"
Supervisor: Prof. Nalini Venkatasubramanian

This project aims to enhance and transform the resilience of older adults in our communities during disasters – this population group is often severely impacted during large events due to the lack of effective triage, comfort, and care. Through the use of a smart-space platform called CareDEX, this effort will enable the assimilation and exchange of customized care information rapidly between first responders, caregivers in senior housing facilities, and older adults in a secure manner.

Master's Thesis – UFF   2018-2020

Project: "Criminality and urban space: an analysis of the relationship networks between types of crime, victim and spatial location in Rio de Janeiro"
Supervisor: Prof. Vinicius M. Netto

I explored relationships between urban dynamics and crime. I have investigated territorial criminal patterns in Rio de Janeiro, Brazil, to understand how people's spatial location and personal characteristics influence their propensity to become a victim of certain types of crime. I have used a complex network model to group similar criminal occurrences according to the victims' profiles, crime characteristics, and location.

Senior Thesis – Multivix   2017

Project: "Connected Urbanity: a reconciliation between urban voids and open spaces in the Jesus de Nazareth slum"
Supervisor: Prof. Renata Lóra

We analyzed the urban landscape of the Jesus de Nazareth slum, Vitória (ES), Brazil, emphasizing free spaces and urban voids. Our goal was to propose neighborhood revitalization by creating an urban connection between these spaces.

Research project – Multivix   2014

Project: "Morphological analysis of the central streets in Vitória (ES)"
Supervisor: Prof. Agnes Thompson

We developed a type-morphic framework for urban form analysis. The framework captures typological variations in streets through floor plan analysis and cross sections, providing insights into the relationships among physical elements (buildings, lots, and streets) at a graphical scale.

Research project – Multivix   2013-2014

Project: "Analysis of natural lighting performance in drawing classrooms in Vitória (ES)"
Supervisor: Prof. Aline Sauer

We analyze the natural lighting performance of four design classrooms of a higher education institution in Vitória (ES) - Brazil to verify the comfort conditions to which users are subjected.

Research project – Multivix   2012

Project: "Urban development in the northern cities of the state of Espírito Santo"
Supervisor: Prof. Anna Claudia Peyneau

We analyzed systematically physical and territorial challenges in northern Espírito Santo, Brazil, proposing sustainable development solutions. The project aimed to elaborate an orientation plan for urban development in these municipalities.

Skills

Research Methods
Qualitative research method (Field study, Observation, Interview), Quantitative research method (Data analysis, Survey, Statistical analysis, Graph mining).

Technologies
Python, GIS, Stata, Figma, Anaconda, Jupyter Notebooks.

Awards and Scholarships

M.Sc. Scholarship: Full M.Sc. funding scholarship from the Brazilian research agency CAPES (2018).
Undergraduate Research Scholarship: Scholarship from the Brazilian research agency FAPES (2014).

Publications

Journal Papers

F. C. Ventorim; V. M. Netto. 2024. The Hidden Connections of Urban Crime: A Network Analysis of Victims, Crime Types, and Locations in Rio de Janeiro. *Urban Science*, 8(2):72. https://doi.org/10.3390/urbansci8020072

F. C. Ventorim; V. M. Netto. 2023. Crime and urban space: the relationship networks between crime, victims and location in Rio de Janeiro. *urbe. Revista Brasileira de Gestão Urbana*, *15*, p.e20220141. https://doi.org/10.1590/2175-3369.015.e20220141

Conference Proceedings

F. C. Ventorim; F. P. Dias; J. T. Araujo; R. M. Correa. 2019. *Contemporary city and appropriation of public space: notes on a sensitive analysis of public spaces in the Botafogo neighborhood in Rio de Janeiro/RJ.* In: 8 Conferência da Rede Lusófona de Morfologia Urbana – PNUM, Maringá, 879-895.

F. C. Ventorim; R. M. Lora. 2017. *Connected urbanity: a reconciliation between urban voids and open spaces in the Jesus de Nazareth slum.* In: 6 Conferência da Rede Lusófona de Morfologia Urbana – PNUM, Vitória, 293-301.

F. C. Ventorim; R. M. Lora. 2016. *Urban voids in a segregated city: an analysis of the Jesus de Nazareth slum, Vitória – ES.* In: III Fórum Habitar, Belo Horizonte.

F. C. Ventorim; L. R. Bragatto; M. L. Rodrigues; I. P. Dias; A. C. Marques; A. C. Diniz; G. Achiamé; A. S. Sauer; F. Rembiski. 2014. *Analysis of natural lighting performance in drawing classrooms in Vitória (ES).* In: XV Encontro Nacional de Tecnologia do Ambiente Construído – ENTAC, Maceió, 897.

Conference Posters

F. C. Ventorim; L. R. Bragatto; M. L. Rodrigues; I. P. Dias; A. C. Marques; A. C. Diniz; G. Achiamé; A. S. Sauer; F. Rembiski. 2014. *Analysis of natural lighting performance in drawing classrooms in Vitória (ES).* In: Jornada de Iniciação Científica da Multivix Vitória – JICVIX, Vitória.

F. C. Ventorim; A. L. Thompson; A. C. Marques; G. Achiamé; P. França; V. S. Neto. 2014. *Morphological analysis of the central streets of Vitória (ES).* In: Jornada de Iniciação Científica da Multivix Vitória – JICVIX, Vitória.