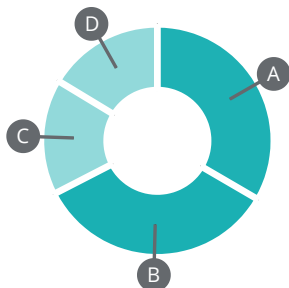# LEONARDO NICOLETTI

Social Data Scientist, Student of Cities.

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MY BACKGROUND

- A Data Science and Visualization
- B Urban Planning
- C Public Policy
- D Research

WORK EXPERIENCE

Data Scientist and Data Visualization Designer

Computational Urban Science and Policy Lab (CUSP)   📅 09/2019 - Ongoing
📍 The Hague, Netherlands

Developed an open source computational framework to assist planners in the design of more equitable accessibility policies.

- Currently building an interactive web application with D3.js to aid equitable decision making within urban accessibility policies.
- Presented this research at MIT's 6th International Conference on Computational Social Science (IC2S2)
- Built open source Python module to quantify urban accessibility in cities
- Used unsupervised machine learning to quantify segregation in global cities

Regional Planning Technical Assistant

Metro Vancouver   📅 09/2018 - 05/2019   📍 Vancouver, BC

Successfully provided growth planning recommendations to 21 member municipalities, the Climate Action Committee (CAC) and the Regional Planning Action Commmittee (RPAC) of the Metro Vancouver Regional District.

- Informed regional planning policies through analytics of large land use, environment, LiDAR, and housing datasets (100M+ rows)
- Informed amendments to the Metro 2040 Regional Growth Strategy
- Met regularly with political committees to communicate technical insights
- Jump-started Metro Vancouver's environmental indicators program
- Developed regional datasets for Tree Canopy Cover and Impervious Surfaces
- Developed a data driven tool for identifying regional tree planting potential
- Forecasted the impact of urban development on regional tree canopy cover

Student Consultant

UBC Social Ecological Economic Development Studies (SEEDS)
📅 01/2018 - 05/2018   📍 Vancouver, BC

Successfully provided recommendations to UBC Campus and Community Planning for the allocation of solar energy facilities on university roofs.

- Evaluated the technical potential of solar energy capture for UBC's 537 roofs
- Analyzed raw LIDAR point clouds to create Digital Surface Models
- Automated data analysis and solar simulation workflows
- Quantified daily, monthly, and yearly estimates of received solar radiation
- Created a solar suitability index ranking all 537 campus roofs
- Calculated potential energy and emission reductions from solar energy

Geospatial Data Analytics Intern

Universita di Bari   📅 06/2017 - 08/2017   📍 Bari, Italy

Provided solid groundwork for novel research on urban pollutants monitoring in the industrial area of Taranto, Italy. Quantified green space availability across European cities.

- Used GPS to coordinate in field data collection and in office data analysis
- Designed geospatial workflow for spatial interpolation of sample data points
- Organized and maintained the geo-database of monitoring activities
- Jump-started novel research on temporal variation in green space availability for five European cities

EDUCATION

MSc in Engineering and Policy Analysis
Delft University of Technology
📅 09/2019 - Ongoing   📍 Delft, Netherlands

B.U.F in Urban Forestry
University of British Columbia
📅 2014 - 2018
📍 Vancouver, Canada

- **Faculty of Forestry International Student Scholarship:** Received scholarship award of an amount of 10,000 $ on the basis of outstanding academic performance

  GPA **3.85** / 4.0
- **Dean's Honours Roll**

SKILLS

Data Analysis	Machine Learning
Programming	Data Visualization
Data Journalism	Network Analysis
Web Scraping	Web Development
Urban Analytics	Policy Analysis
Regional Planning	Storytelling

TECHNOLOGIES

Python (NumPy, Pandas, Shapely, geoPandas, fiona, NetworkX, OSMnx, matplotlib, seaborn, plotly, mapbox, beautifulsoup4, twint, tweepy, folium, kepler.gl, scikit-learn, Keras, Tensorflow)
R (tidyverse, dplyr, stringr, rgeos, ggmap, ggplot2, rgdal, sf, RJAGS)
SQL (SQL Server, MySQL)
JavaScript (D3.js)
html5 and **CSS**
GIS (QGIS3, ESRI products)
Git (GitHub/GitLab)
Adobe (Creative Suite)

FIND ME ONLINE

🌐 https://leonardonicoletti.com

in www.linkedin.com/in/lenicoletti

🐙 https://github.com/lnicoletti

RELEVANT SCHOOL PROJECTS

Model Based Decision Making

Designed a model-based approach to multi-actor & multi-objective decision-making for flood mitigation in the IJssel River, Netherlands.

Discrete Event Simulation

Built a simulation model of Disaster Relief Operations and Logistics in Bangladesh using Python and Simio simulation software.

Data Analytics and Visualization

Built a predictive model of crime and public infrastructure for 5 US cities using R and Bayesian MCMC machine learning.

Computer Engineering for Scientific Computing

Built a web scraper for extracting house prices and locations from real estate websites using Python.

Actor and Strategy Models

Built a web scraper for extracting a given Twitter user's network of influence using Python.

System Dynamics

Built a model of HIV and TB spread in South Africa using Vensim simulation software.

ADDITIONAL EXPERIENCE

Producer and Project Manager, Community Development

Vancity 📅 01/2019 - 07/2019 📍 Vancouver, BC

Managed and co-lead a project on building a story of the opioid epidemic in the Greater Vancouver Region, through a collaborative community based research approach using photography and written documentary.

- Collaborated with a former heroin addict and homeless individual
- Engaged this specific community, acting as a documentary photographer
- Produced visual communication deliverables for use in Vancity awareness campaigns and programs
- Planned 5 months project timeline
- Planned C$ 30,000 budget
- Prepared project proposal and legal documents

LANGUAGES

English	Native ▮▮▮▮▮	French	Native ▮▮▮▮▮
Italian	Native ▮▮▮▮▮	Spanish	Proficient ▮▮▮▮▯

PUBLICATIONS

Regional Tree Canopy Cover and Impervious Surfaces

Metro Vancouver

📅 10/2019

🔗 http://www.metrovancouver.org/services/regional-planning/PlanningPublications/EcologicalHealth-TreeCanopyCoverImperviousSurfaces.pdf

Roof Solar Potential at UBC

UBC Social Ecological Economic Development Studies (SEEDS)

📅 08/2018

🔗 https://www.sustain.ubc.ca/sites/default/files/seeds library/UFOR_401_SolarSuitabilityAnalysis_FinalReport.pdf

MEDIA COVERAGE

⭐ **Canadian Broadcasting Corporation (CBC)**

High-density neighbourhoods leave room for trees, says Metro Vancouver

⭐ **The Globe and Mail**

Cities like Vancouver need to do more to protect their trees

⭐ **The Georgia Straight**

Paving paradise: Low-density housing linked to tree loss, rise in impervious surfaces in Metro Vancouver

REFERENCES

Dr. Trivik Verma

Assistant Professor, Director of CUSP (Computational Urban Science and Policy Lab) at Delft University of Technology
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Josephine Clark

Regional Planner, Regional Planning at Metro Vancouver
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Marcin Pachinski

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