Harikishan Perugu

Carbon Data Scientist

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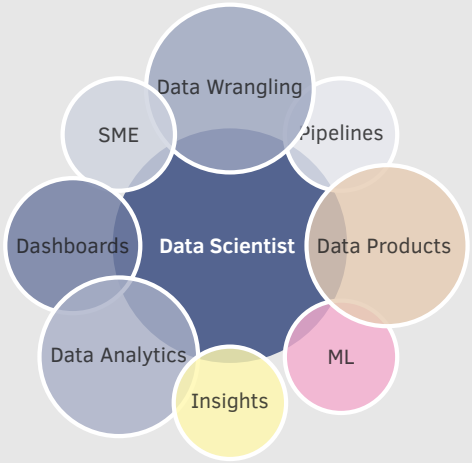
www.hkperugu.com

Hard Skills



Software

- Python
- PostgreSQL
- ArcGIS
- PowerBI
- Bash
- R
- MySQL
- postGIS
- HTML/CSS
- JavaScript
- AWS
- Azure
- git
- Tableau
- Databricks

An experienced environmental data scientist with 15 years of experience in data-driven solutions for climate change and air quality problems. Used broad knowledge in transportation, emissions, and air quality areas to lead the development of tools for quantifying transportation environmental impacts. Envisioned road maps for designing effective strategies to achieve transportation decarbonization goals and developed dashboards to track the progress of transport GHG emission reduction pathways.

Work History

02/2022 – Current

Program Lead at California Dept.of Transportation Marysville, CA

Collaborated with multiple in-house clients to understand their pain points and created broader strategic product priorities with detailed technical specifications for climate change-related data products.

Established data partnerships with external data partners and designed effective QA/QC procedures for transportation GHG emissions data and highway infrastructure's climate change vulnerability indices data.

Led a team to create a data analytics tool for the climate change adaptation of transport assets and transport carbon emissions data from the ground up that resulted in 1.2 million dollar savings to the organization.

05/2021 – Current

Climate Change Data Consultant at World Bank Washington DC

Acted as Subject Matter Expert for the climate change mitigation and life cycle analysis methods of transport projects and assisted the climate change program management in procuring emission and transportation activity data.

Founded Global Transport GHG Analytics product using data partnerships with multiple international agencies for the Country Climate & Development Reports.

Created roadmaps for the country-specific transportation decarbonization scenarios and closely partnered with cross-functional leaders to include the roadmaps in their annual strategic plans.

05/2012 – 05/2021

Program Lead at California Air Resources Board Sacramento, CA

Initiated transport-decarbonization research road map for the agency through understanding different program needs and external client requirements.

Strategically supported the agency's electric mobility program through data analytics and insights that are generated from manufacturers, industry and academic research consortium partners.

Engineered software scripts to perform audits to ensure quality, completeness, and correctness of the emissions, air quality, and transport sustainability data at the point of delivery and after ingestion into the internal data warehouse that eliminated 400 man-hours annually.

Conceptualized and applied methods for the accurate assessment of life cycle emissions for battery electric buses and led the development of air quality impact and energy consumption tools using real-time data collected through data partnerships.

Created tools to measure and track KPIs for transit decarbonization program and estimated annual transit agency-level energy usage/GHG emission reductions to verify the efficacy of state subsidy programs.

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Social Network

Github Profile Link

LinkedIn Profile Link

Medium Profile Link

Soft Skills

- Ideated Innovative Solutions
- Data Solutions Leadership
- Full cycle Product Development
- Strategic Planning
- Analytical and Design thinking
- Key Stakeholder Communication
- Interdisciplinary Collaboration
- Mentoring Experience

Certifications

- Professional Traffic Engineer
- Professional Transportation Planner
- Enterprise Blockchain Architect
- ESG Specialist

06/2007 – 05/2012 **Engineer at OKI Regional Council** Cincinnati, OH

Influenced broader regional climate change mitigation and air quality improvement policies through innovative transportation and emission data analytics products.

Proposed creative solutions and produced data-driven insights for policymakers. Converted proof of concepts into products through external stakeholder collaboration against challenging deadlines.

Built effective data partnerships with the other state agency partners to build a bottom-up data warehouse for carbon emissions and transport activity data.

Devised a model to estimate emission and air quality impacts of regional truck transport from freight flows and traffic count data and published findings in peer-reviewed journals.

Selected Accomplishments

2022 Invited faculty at Sacramento State University to teach graduate level course on Transportation Planning and Data Science.

2020 Granted U.S. Permanent Residency in Alien of Extraordinary Ability Category (only awarded to persons who have sustained international acclaim.)

2016 Invited Technical Session Chair, International Transportation and Air Quality Conference, Lyon, France.

2011 International Travel Fellowship, Beihang University, China.

Education

2009 – 2013 **Doctor of Philosophy** Cincinnati, OH
PhD in **Civil Engineering** from University of Cincinnati

2004 – 2007 **Master of Science** Cincinnati, OH
MS in **Civil Engineering** from University of Cincinnati

2001 – 2002 **Postgraduate Diploma** Hyderabad,India
PGD in **Construction Management** from Engineering Staff College of India

1997 – 2001 **Bachelor of Technology** Hyderabad,India
BTech in **Civil Engineering** from Jawaharlal Nehru Technological University

Selected Publications/Provisional Patents

2022 Perugu, H. "Characterizing Battery Electric Buses' Energy Consumption and GHG emission benefits". Accepted at Applied Energy Journal, Elsevier Publication

2022 Perugu, H. "Assessing the trajectory of transportation greenhouse gas emissions reduction in California with regional refineries' inventory data". Under Review at Transportation Research: Part D

2022 Perugu, H. "Tracking and tokenization of renewable energy consumption of Electric Cars".

2019 Perugu, H. and Paturu, S. "Real-time estimation of electric car's energy consumption using machine learning methods".