

# Vijay Lulla

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## Objective

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To draw from my cumulative experience in geospatial information technology, spatial databases, scientific scripting, and data analysis to elucidate complex socio-ecological phenomena, with a special emphasis on data ethics.

## Experience

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### Assistant Professor

August 2013 – present

IUPUI (Indianapolis, IN)

- Conducted and published geospatial research primarily using Python and R.
- Created a prototype website using Django and PostgreSQL for a National Endowment for Humanities project titled “FlightPaths: Mapping our Changing Neighborhoods.”
- Optimized my Python and R scripts for Indiana University’s supercomputer infrastructure (Cray Linux Environment).
- Developed and taught *new curriculum* on programming for upper level college students with special emphasis on Python and SQLite+Spatialite.
- Taught college courses on Remote Sensing, Digital Image Processing, and Geographic Information Systems (GIS).
- Ran the faculty *R support group* for a course of a year.
- Run, intermittently, **tRivia** for the monthly Indy R User group meetups.

### Geospatial Analyst

October 2012 – August 2013

Environmental Solutions & Innovations, Inc. (Cincinnati, OH)

- Conducted habitat suitability modeling (HSM) for the endangered Indiana Bats.
- Oversaw GIS pertaining to field surveying (map preparation and field data input and plotting) required as a part of environmental permitting.
- Automated, and standardized, storing field survey data in an easily searchable format.
- Consolidated (cleaned, organized, and standardized) past field survey data.
  - Stored data into SQLite database (with geospatial capabilities) in order to optimize for use with R, Python or GIS software (QGIS or ArcGIS).

### Postdoctoral researcher

August 2010 – December 2012

IUPUI (Indianapolis, IN)

- Developed an urban heat vulnerability model:
  - Image processing of satellite base remote sensing imagery.
  - Statistical modeling of vulnerability using social and physical factors.
- Wrote a script that generated student evaluation of courses for the whole of School of Liberal Arts (about 400 faculty members).

## Education

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- 2005 – 2010 - Indiana State University - PhD in Geography (Remote Sensing and GIS)
- 2002 – 2005 - Indiana State University - MA Geography (Remote Sensing and GIS)
- 1996 – 2000 - Maharaja Sayajirao University, Gujarat, India - BE (Electrical Engineering)

## Professional Skills

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*Technologies:*

- Programming languages: Python (with Numpy and scipy), R (with RCpp), Go, Shell scripting
- Databases: PostgreSQL+Postgis, SQLite
- Cloud technologies: Docker, Linux, AWS (EC2 and S3)
- Markup languages: HTML/CSS, Markdown, TeX/LaTeX

***Tools:***

- GIS software: ESRI ArcGIS, QGIS, Spatialite, Erdas Imagine, MultiSpec
- Development tools: git, make, Docker
- Other tools: Office Programs (Microsoft Excel, Powerpoint, Word), Zotero (bibliography management)

***Skills and knowledge:***

- Teaching: Experience of teaching technical topics (programming, databases, and statistics) to non-technologically inclined people.
- Systems: Equally conversant with using windows, macos, and Linux (Ubuntu and Cray Linux Environment)