

# Jacob Chapman

Macomb, Illinois USA

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in jacob-chapman

**Interests:** spatial data pipelines, command-line tools, digital humanities

**Work Authorization:** United States (citizen), Hong Kong (dependant visa)

## Employment

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### TEKsystems

**August–September 2024**

*Senior Python Developer*

*Kwun Tong District, Hong Kong S.A.R.*

- Core banking system data transformation Python scripts and custom SQL

### Atlas AI P.B.C.

**February 2021–September 2023**

*L3 Senior Engineer*

*(Remote) Palo Alto, California*

- Service contracts data delivery: created ad-hoc dataset processing scripts with QGIS, SAGA GIS, GDAL and OGR, ensuring efficient customer data extracts and timely deliverables
- Vector spatial data pipelines: automated the generation of region boundaries, transforming boundaries into customizable worldviews at any administrative level while preserving topology
- Raster spatial data pipelines: automated the generation of regional data products (Machine Learning outputs to usable data, clipping, reprojection, raster calculus)
- Scaled up remote sensing workflows to process several petabytes (LandSat, Sentinel-2) via Cloud Batch
- QA: developed a data quality validation pipeline for raster and vector datasets

### Atlas AI P.B.C.

**November 2020–February 2021**

*Senior Data Engineer (Consultant)*

*(Remote) Palo Alto, California*

- Designed and implemented robust data pipeline architecture, integrating diverse spatial and non-spatial datasets using PostgreSQL, Python, and RasterIO
- Migrated spatial data from PostGIS to BigQuery, enhancing data access and scalability

### BERA Brand Management

**December 2019–February 2021**

*Data Engineer (Consultant)*

*(Remote) New York City, New York*

- Azure to GCP migration using Google BigQuery, Fishtown Analytics dbt, GitHub Actions (CI/CD), Pulumi (IaC), and Docker

### Pomelo Travel

**January 2020–July 2020**

*Spatial Data Engineer (Consultant)*

*(Remote) Orem, Utah*

- Developed spatial data infrastructure using GeoJSON and MBTiles tilesets
- Decreased application response time by 83% and provided scalable solutions for web and mobile platforms
- Revamped user interfaces using Mapbox, TypeScript, and Alpine.js frontend development

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| <b>Brigham Young University–Hawaii</b><br><i>Systems Consultant</i>  | <b>September 2017–April 2019</b><br><i>Laie, Hawaii</i>    |
| <ul style="list-style-type: none"> <li>○ Resolved hardware and software issues in 300+ Windows and Mac computers</li> <li>○ Trained 7 employees in a Tier 2 technical IT support environment</li> </ul>  |  |
| <b>Non-Profit Organization</b><br><i>Volunteer Resources Manager</i>   | <b>August 2014–July 2016</b><br><i>Iloilo, Philippines</i> |
| <ul style="list-style-type: none"> <li>○ Automated onboarding, training, and flight approval business processes for ~300 volunteers</li> <li>○ Renegotiated publishing service contract and reduced annual cost by 43%</li> <li>○ Gained full professional proficiency in reading / writing visayan Filipino dialects</li> </ul> |  |
| <b>Snow College Karen Huntsman Library</b><br><i>IT Support Tier 1 Helpdesk</i>  | <b>August 2013–May 2014</b><br><i>Ephraim, Utah</i>        |
| <ul style="list-style-type: none"> <li>○ Published the first online digital collection of the library with 87 years of records</li> </ul>  |  |

## Selected projects

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1. "Library: a CLI multi-tool for building, browsing, and blending large media archives." 2020–2024. 🌐
2. "US Visa Statistics extracted from multi-page PDF tables." 2024. 🌐
3. "City Honeymoon: visa-free multi-passport and/or multi-origin rendezvous." 2023. 🌐
4. "HN Mining: data extraction and exploration of HackerNews." 2022. 🌐
5. "eject: an advanced YouTube playlist explorer." 2022. 🌐 🌐
6. "City Window: random city tours from YouTube." 2021. 🌐
7. "City Abacus: plan your gap year in five minutes." 2021. 🌐
8. "Travel history scratch-off map." 2020. 🌐 🌐
9. "UNLI Reverse Flights: search backwards from destinations." 2019. 🌐 🌐

## Education

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| <b>BA, Cultural Anthropology</b><br><i>Brigham Young University–Hawaii</i> | <b>2017–2019</b><br><i>Laie, Hawaii</i>  |
| <b>+48 Credit Hours</b><br><i>Brigham Young University–Provo</i>           | <b>2016–2017</b><br><i>Provo, Utah</i>   |
| <b>+30 Credit Hours</b><br><i>Snow College</i>                             | <b>2013–2014</b><br><i>Ephraim, Utah</i> |

## Technical skills

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- Python (Pytest, NumPy, Pandas, scikit-learn, SciPy, ipdb)
- GDAL, OGR, PostGIS, OpenStreetMap
- PostgreSQL, SQLite, SQL query optimization
- BigQuery, dbt (data build tool), analytics engineering, data modeling
- Geographic Information Systems, QGIS, GeoPandas, SAGA, GRASS GIS

- R (data.table, reshape2, caret, raster, sf)
- Linux (Fedora, RHEL); Mac OS 9; Microsoft Windows 2000
- Git, GitHub Actions, Pulumi
- DevEx, creating CLI tools, internal tools
- GNU Parallel, strace, ltrace, iotop, high-performance computing (HPC)
- Google Cloud Platform [GCP] (Cloud Batch, Compute Engine, CloudSQL, Cloud Storage)
- Microsoft Azure, SQL Server
- Process mapping (swimlanes, fishbone diagram)
- Spreadsheets (Excel), Technical Writing, Looker Studio
- HTML5, JavaScript, Elm
- Information theory, general systems theory, biomimicry
- Direct manipulation interfaces

## Professional development interests

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- PL/pgSQL database applications
- DoltgreSQL, PGLite, Cassandra, Scylla, OmniSci, Kinetica DB
- SeaweedFS, Ceph, JuiceFS, GlusterFS
- Spark, Flink, Hadoop, Tableau
- PySAL, KNIME, econometrics
- Rust, WebAssembly, Elixir, Erlang, OCaml, F#
- Amazon Web Services [AWS]
- Ambient technology
- Behavioral economics, behavioral geography / environmental psychology, revealed preferences, emergent change processes

## Certifications

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- CompTIA Security+ CE
- Lean Six Sigma White Belt
- TestOut Network Pro

## Languages

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**Fluent:** English

**Intermediate:** Hiligaynon, Japanese, Kinaray-a