

# Jason S. Jorgenson, PhD

Landscape archaeologist & research-software engineer

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Open to new roles — research, research software engineering, or geospatial / data work. Remote-friendly.

## PROFILE

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Landscape archaeologist and research-software engineer who turns field-bound archaeological and agro-environmental data into models other researchers can run. PhD (Liverpool) on the human impact on Early Bronze Age landscapes, with a decade since spent across spatial modelling, agro-ecosystem science and durable scientific software — a pan-European climate & food-security knowledge hub (MACSUR) and cloud-based e-health in the UK NHS among it. Two of my desktop research tools are now live, tested, openly-licensed web platforms.

## SOFTWARE & PLATFORMS

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### PFP Works

current

Software platforms & sustainable food-production ventures

- The venture I build under. **Prairieline** — a from-scratch, multi-tenant Node.js retail platform (POS, storefront, member portal, online ordering, inventory, regulatory-compliance integrations, WebAuthn/passkey auth, per-tenant data isolation), live in production. **Prairie Fresh Produce** — a farm-to-table aquaponics venture.

### Landuse Analyst

la.arkygeek.com

Catchment, palaeo-hydrology & palaeo-environment modelling

- Cloud platform + QGIS plugin: FastAPI orchestration, Astro + MapLibre front-end, a federated off-host compute service, a documented deploy pipeline, and a curated global catalogue (~90 transparently-scored datasets). A pure-Python re-implementation of my C++/Qt thesis tool that reproduces the thesis runs.

### DataRanking

dataranking.arkygeek.com

Quality classification of datasets for agro-ecosystem model calibration

- Web port of the Kersebaum et al. (2015) framework; pinned byte-for-byte to the original 2014 C++/Qt tool via a regression test — reproducible by construction.

## EDUCATION

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### PhD, University of Liverpool

2010

*The Impact of South Levantine Early Bronze Age Communities On Their Landscapes.* The examination committee recognised the accompanying open-source software as one of three distinct contributions to the discipline.

### BSc, University of Lethbridge — Geography and Archaeology.

2005

## EXPERIENCE

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### Independent Software & Product Developer — PFP Works

current

- Design, build and operate the software end-to-end under my PFP Works venture — architecture, full-stack development, deployment, operations, and regulatory-compliance integrations — including a multi-tenant retail platform live in production.

### Independent Researcher & Software Developer (arkygeek.com)

2017 – present

- Built and maintain the Landuse Analyst and DataRanking platforms (above); research on human–environment modelling and sustainable indoor food production (aquaponics, bio-energy).

### Research Assistant, Edge Hill University, UK

2016 – 2017

- Cloud-based e-health systems with academics and NHS clinicians; prototype approved for use at Aintree University Hospital (a notably strict NHS Trust). Extended privately as **OpenPCI**, a full-stack Laravel/Vue

clinician–patient communication app.

**Postdoctoral Research Fellow, University of Reading, UK — MACSUR**

2012 – 2015

- One of two full-time hub-level staff on MACSUR, a pan-European knowledge hub (>70 institutions, 18 countries) on climate change, agriculture and food security; led cloud-based integration of members' models and data; climate-change effects, adaptation and mitigation.

**Web Development Officer, University of Liverpool, UK**

2009/10

- Subject-centre website, online survey system, CMS maintenance (6-month post).

**Interim Librarian, Council for British Research in the Levant, Amman**

2006

- Library operations and acquisitions; Dewey reclassification; assisted redesigning the institute network and server (3-month post).

**Owner / Operator, Computer Mentors, Oyen, Alberta**

1996 – 2001

- High-street retail and service (computers, electronics, satellite), one-hour photo lab, internet café, adult computer courses, a bi-weekly newspaper, and a community cable channel.

## PUBLICATIONS

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- Kersebaum, K.C., Boote, K.J., **Jorgenson, J.S.**, et al. (2015). Analysis and classification of data sets for calibration and validation of agro-ecosystem models. *Environmental Modelling & Software* 72, 402–417. doi:10.1016/j.envsoft.2015.05.009.
- **Jorgenson, J.S.** (2010). Modelling Site Catchments — an Open-Sourced GIS approach. In A.T. Wilson (ed.), *Proceedings of the CAA UK Chapter Meeting, University of Liverpool, 6–7 Feb 2009*, BAR S2182, 25–43.
- **Jorgenson, J.S.** (forthcoming). Quantifying Land-Use Strategies in the Early Bronze Age Settlement of Tell esh-Shuna. In *The Development of Social Complexity in the Southern Levant: Excavations at Tell esh-Shuna North, Jordan*, Levant Supplementary Monograph Series, CBRL.

A portfolio of further papers (Landuse Analyst software, methodology, and applied case studies) is in preparation.

## TECHNICAL SKILLS

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- **Languages:** Python, C++, R, PHP, JavaScript, HTML/CSS, BASH (strong); Julia, SQL (working).
- **Geospatial:** QGIS, GRASS GIS, PostGIS, ArcView, MapLibre; catchment / cost-surface / hydrology / cellular-automaton modelling.
- **Data & web:** FastAPI, Astro/Svelte, PostgreSQL/MySQL/SQLite, Alembic, REST/OpenAPI, R, SPSS, LaTeX; Linux/Unix, macOS, Windows.
- **Practice:** reproducible research software, regression testing, open licensing, cloud/off-host compute, deploy pipelines.

## RESEARCH INTERESTS

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Human–landscape interaction and resource procurement; palaeo-hydrology and catchment modelling; climate change, carbon sequestration and food security; sustainable and localised (indoor / aquaponic) food production; durable, reproducible research software.

*References available on request.*