# David Montague

## Experience

**Exactrics, Inc.** • Founder & CTO • Jul 2018 – Dec 2019

*With just a few photos, Exactrics lets you search, filter, and compare clothing by fit while you shop online*

* Built a pipeline for converting sets of smartphone photos into millimeter-precision clothing scans
* Built custom fit-search, look-search, and fit-comparison engines for use with our scan data
* Built and maintained our backend server and cloud deployment infrastructure
* Collaborated on the frontend, including development of client SDKs and custom data visualizations

**Palantir Technologies** • Member of the Technical Staff • Oct 2015 – Feb 2018

* Adapted modern math, stats, and CS techniques to build solutions for Palantir’s most critical customers and product teams. Selected projects include:
  + A personalized document feed used by intelligence analysts to surface urgent new reports
  + A viewership model used by a TV network to simulate and optimize promotional campaigns
  + A customer churn model used by a major payment processor to prioritize CRM efforts

## Education

* **Stanford University** • PhD, Mathematics • MS, Statistics • 2012 – 2017
  + Thesis: [Covariance estimation and graphical models for infinite collections of random variables](https://searchworks.stanford.edu/view/11891187)
* **Cambridge University** • MASt, Mathematics • Churchill Scholarship • 2011 – 2012
* **University of Michigan – Ann Arbor** • BS, Mathematics • 2007 – 2011

## Technical Skills

**Machine Learning and Data Science**

Have prototyped and deployed ML models related to TV advertising, fraud detection, remote sensing, predictive maintenance, and more. Deeply familiar with standard techniques for working with images, audio, text, etc.

**Computer Vision and Augmented Reality**

Experienced using packages like OpenCV and AliceVision for a variety of image and mesh processing algorithms, and using tensorflow/keras to design, train, and deploy various CNN-based computer vision models. Also experienced with AR toolkits and using raw RGB-D data from depth cameras and dual-camera phones.

**High-Performance Python**

Deeply familiar with scientific python (numpy, scipy, scikit-learn, etc). Experienced using Cython and C++/PyBind11 to write high-performance extensions. Comfortable using celery and Spark for distributed workloads.

**Web APIs, Frontend, and DevOps**

Extensive experience with the python ASGI ecosystem, especially pydantic, fastapi, and starlette. Comfortable with frontend development for iOS and the web (TypeScript + React/Vue). Familiar with security concerns for public web services, and experienced deploying containerized stacks to multiple cloud providers.

## Other

* My open source contributions are visible at <https://davidmontague.xyz/open-source>
* A list of selected articles and publications is available at <https://davidmontague.xyz/resume>

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