Andrew Collette Ph.D.

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Originally trained as a physicist, I am deeply experienced at all levels of software development, with particular emphasis on enabling scientists and engineers to effectively leverage the cloud and modern AI techniques. In my current role at Enthought, I run a startup-style team developing Enthought's next-gen platform for science, *Edge*.

Since joining Enthought in 2015, I have worked both on the product side and on consulting projects, helping some of the world's leading companies solve business problems with modern software techniques. Beginning in 2018 I took responsibility for architecture and implementation of our core product stack, ultimately leading to my current role as Vice President of Product Engineering. Hundreds of Enthought and customer developers rely on our tools to conduct millions of dollars worth of business, and to support tens of thousands of end users working with our hard-science applications.

Other aspects of my professional journey include obtaining a doctorate in physics; developing a highly popular open-source project called *h5py* for managing large numerical datasets; and even a short-lived startup, Heliosphere Research LLC. I am also the author of the O'Reilly book *Python and HDF5: Unlocking Scientific Data*.

WORK EXPERIENCE

Vice President, Product Engineering   March 2022 – Present
Enthought, Austin TX

Reporting directly to the CTO, leader of a startup-style team working on Enthought's flagship scientific analysis platform *Edge*. This is in addition to overseeing maintenance work and new features for existing Enthought products. Starting from scratch, brought Edge into a releasable state in under 12 months, and into full production in less than 24 months, on time and meeting all critical milestones. Iterated with the Product Manager on feature design, architecture, user communication, and other aspects of bringing a new product to market. Worked closely with the CTO other company functions such as DevOps and Support, to ensure users have the best possible experience with the deployed product.

Director, Enthought Platform   January 2018 – March 2022
Enthought, Austin TX

Managing a team of eight developers, handled the architecture and implementation for Enthought's Solution Suite (ESS). ESS is the set of core network services used by Enthought's clients and consulting developers, and includes a Python package server and client, Data Catalog service, identity management and authorization, and services for GPU-accelerated remote computing. This fully containerized stack serves as the standard technology foundation for consulting projects, allowing our specialists and customer stakeholders to focus on science and the specifics of their business problem.

Scientific Software Developer   November 2015 – January 2018
Enthought, Austin TX

Individual contributor and later team lead for multiple Enthought consulting projects. Consulting work at Enthought is a highly agile process requiring daily coordination with customer developers and other stakeholders, as we build out hard-science applications to help them solve business problems. Key aspects of this role included working with customers to express their requirements in a clear way, and then devising a strategy to deliver rapid incremental updates for their evaluation. There was also a strong teaching element to this work; I mentored many of our early customer engineers as they began their Digital Transformation journey. I reported initially to a team lead and later to the appropriate VP-level manager responsible for customer success.

Founder   February 2013 – November 2015

Heliosphere Research LLC, Boulder CO

Concurrent with my work at the University of Colorado, I ran a product/consulting company which served the academic and industrial communities. I worked closely with the Illinois-based nonprofit HDF Group, for whom I provided Python training. Heliosphere's flagship product was the Advanced Plotting Toolkit, a set of LabVIEW bindings for the "matplotlib" visualization library. This product was sold for approximately two years on National Instruments' LabVIEW Tools Network. I later licensed the code to Enthought, where it formed the foundation of Enthought's product Python Integration Toolkit for LabVIEW.

Research Scientist   May 2013 – November 2015

Laboratory for Atmospheric and Space Physics, Univ. Colorado Boulder

Performed NASA-funded laboratory research into the effects of high-speed impacts on spacecraft and planetary surfaces. Experiments focused on in-situ detection of dust grains by spacecraft equipped with antenna systems. Research was carried out at the CU Boulder IMPACT accelerator facility, which I helped construct. Regular publication in major journals, proposals to NASA and NSF, and close collaboration with others in the field. Daily management of graduate and undergraduate students on lab projects.

Postdoctoral Researcher   July 2010 – May 2013

Laboratory for Atmospheric and Space Physics, Univ. Colorado Boulder

Took a leading role in the construction and commissioning of the new hypervelocity dust-grain accelerator at CU's Institute for Modeling Plasma, Atmospheres and Cosmic Dust (IMPACT). Under extreme deadline pressure, performed and published many of the first results from this facility, on impact-produced light flash and neutral gas generation.

EDUCATION

University of California, Los Angeles (Los Angeles, CA)

Ph.D., Physics — 2010. Dissertation on the physics of expanding laser-produced plasmas.

University of Rochester (Rochester, NY)

B.S., Physics — 2004.

SKILLS & OTHER

Languages: Python, including low-level Cython integration and package building. C to the extent of integrating third-party libraries with CPython and some numerical code. LabVIEW for integration and laboratory automation. Some recent familiarity with Javascript and TypeScript; other languages I've used in the past but am less familiar with include Go, Java, C++, and IDL (by NV5 Geospatial).

Cloud Services: Very familiar with AWS and Kubernetes as this is our standard platform at Enthought; emphasis on S3, EC2, EKS, IAM, and the Cost Explorer API. Have used Azure occasionally on customer projects.

Other Tools and Frameworks: Container technologies including Docker/DockerHub/Quay.io; scientific Python stack including NumPy/SciPy, FastAPI, Flask, PostgreSQL, Linux, and enough React/HTML/CSS to be dangerous.

Management: "Enthought Agile," a technique for rapidly and responsively developing software in close coordination with technical stakeholders. Continuous 1:1 mentoring and supervisory responsibility for the developers on my team. Management tools involve ZenHub (Kanban/Agile), JIRA, Redmine, or just plain GitHub Issues and Projects.