

# John Saponara

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Longtime linux/open-source developer, strong in math and science, loves to automate and to educate : )

## Education

- 1994 Cornell University, Ithaca NY
  - PhD in Ecology & Evolutionary Biology
  - Spatially explicit simulation of the epidemiology of a plant virus transmitted by insects
- 1985 University of California, Berkeley
  - MS in Energy & Resources
- 1983 La Salle University, Philadelphia PA
  - BA in Physics

## Experience

- Senior Software Engineer, Mar 2018 - now
  - Bloomberg LP in Princeton NJ
  - Serving as team expert in Python and the Linux command line; drove the migration to Python 3.
  - Rewrote legacy credit card ETL pipeline, leveraging python's dynamic nature for easy configurability.
  - Generated services and database procedures from API schema to support front-end screens.
  - Automated categorization of pdf hotel receipts in acclaimed proof-of-concept.
  - Python, SQL, C++, Javascript, git, Jenkins, Jira, PostgreSQL, AWS boto3.
- Senior Software Developer, Aug 2017 - Dec 2017
  - Contract at AT&T Labs in Bedminster NJ
  - Extended a research NER pipeline to anonymize sensitive customer data via NLP algorithms (CRF, LSTM).
  - Sorted model "errors" by model confidence to dramatically improve labelling accuracy.
  - Provided a series of visual tools to monitor labelling and model accuracy.
  - Served as local expert on Linux, C++, and Python while suggesting many improvements to the system.
  - Maintained a production NER pipeline in C++. Project exceeded all goals.
  - Python, C++, CRFsuite, scikit-learn, git
- Senior Software Developer, Mar-Jun 2017
  - Contract at Vencore Labs in Red Bank NJ
  - Mapped the US electric grid in real time using twitter and other data feeds.
  - Refactored and greatly extended a proof-of-concept web gui and ReSTful API.
  - Leaflet, Jquery, Javascript, Flask, Eve, Eve-Swagger, Mongo, Python, git, GeoJSON
- Consultant, Sep 2015 - Feb 2017
  - Created [OpenTaxForms.org](http://OpenTaxForms.org); open source code on github (user [jsaponara](https://github.com/jsaponara))—fun ideas but coded hastily.
  - Created a web interface and ReSTful API to tax forms, computed from the PDF forms at IRS.gov.
  - Python, Flask, Flask-Restless, SQLAlchemy, Javascript, Casperjs
- Senior Software Architect, Mar-Sep 2015
  - NovoPath, Inc., Princeton NJ (workflow software for pathology labs)
  - Parsed codebase to automate generation of mobile interfaces. Project was cancelled.
  - Python, Flask, FlaskRESTful, SQLAlchemy, Javascript, Angular v1
- Consultant, 2012 - Feb 2015
  - Created fully functional web application proof-of-concept for FoldStar Inc. that allows engineers to design and visualize foldable surfaces (using Three.js; see [foldstar.com](http://foldstar.com))
  - Literature review in tropical tree pathology for a foundation aiming to slow the rate of carbon-emitting investment in wood pulp and paper plantations.
- Senior Programming Engineer, 2007-2009
  - FoldStar Inc., Ringoes NJ (folding design software for engineers)
  - Translated topological algorithms to C++ under a NASA grant for "deployable space structures"
  - Python, VisualC++, VBA

- Senior Software Architect, 2004-2007
  - NovoPath, Inc., Princeton NJ (workflow software for pathology labs)
  - Designed and implemented highly customizable HL7 (medical b2b) API.
  - Developed secure communication interface and HCFA-1500-based billing software.
  - Managed developers in Visual Basic and Python on windows platform.
- Programmer, 2002-2004
  - Genuone Inc in Princeton NJ (brand protection; now OpSec in Boston)
  - Suggested an approach that replaced a months-long planned project with a few days of coding.
  - Automated extraction of product prices from web pages (in Perl, Python, and Java).
  - Scraped data from the internet and served it to company intranet (in Java).
  - Wrote an exchange rate server in Java for local XML-RPC services suite.
- Consultant, 2001-2002
  - Wrote a stock trading simulation for Cornerstone securities litigators
  - Wrote a web crawler for a small book publisher.
  - Real-time calling card server in C++ using CORBA and Oracle for Telcordia Technologies.
  - Adapted software to compute bird territory size for the Research Foundation of SUNY.
- Director of Software Development, 1995-2000
  - Transport Dynamics, Inc. in Princeton (trucking optimization)
  - Worked with optimization experts to develop suite of real-time decision support software products.
  - Managed and mentored programmers, selected tools and built the software development environment.
  - Designed and implemented optimization pipeline, supporting database and network libraries, and GUI.
  - C++ compilers from KAI, IBM, and Cygnus; Purify; AIX, Solaris, Linux
- Adjunct Professor, 1995
  - The College of New Jersey (then Trenton State College), Ewing NJ
  - Taught “Principles of Biology” and received a highly favorable evaluation praising my effective use of small groups and fearless integration of math into the course.
- Research Associate, 1992-1995
  - Dept. of Ecology and Evolutionary Biology, Princeton University
  - Maintained a simulation model of forest succession in the Northeast US.
  - Managed many thousands of stochastic model runs to explore the model parameter space.
  - Wrote a statistics application to process model output.
  - Automated the entire dependency tree from model input to generation of publication-quality figures.
  - C, Bash, Make on SunOS/Solaris
- Research Assistant, 1985-1987
  - Rodale Research Center, Kutztown PA
  - Improved a crop-soil simulation model used to study the conversion from conventional to organic farming.
  - Fortran on MSDOS

## Fun and Mission

- [Princeton Python Meetup](#) co-organizer since 2015
- working on [totaldeaths.net](#) to help counter science denial
- AI Study Group at [FUBAR Labs](#) member, clustering faces to manage family photos with OpenCV and scikit-learn
- [OpenTaxForms.org](#) founder
- homeschooled my son 2010-2012
- co-led a math and science club at the local grade school 2009-2011 (the most fun I’ve ever had!)
- I enjoy demo’ing science to kids; teaching math with knots; growing vegetables; exploring word origins.
- I seek to promote public health, public education, and government transparency.

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