Sean Kaoru Tokunaga

Email: sean@stokedprojects.org
www.stokedprojects.org

Physicist with a penchant for computer programming. After several years in atomic/molecular physics, decided to switch to data science and machine learning.

Current Employment:

Since 09/16: **Data Science & Natural Language Processing consultant (part-time)**
Studybugs Ltd., UK (remote work)
The Studybugs app enables parents to report their children's absence from school.
Job description : Work on parsing plaintext user-input. Writing benchmarks, analysing output data, improving parsing algorithm. All programming in Scala.

Since 09/14: **Associate Professor of atomic and molecular physics**
Université Sorbonne Paris Cité (USPC) - Paris 13, France
Research topics:
- Spectroscopic measurements on molecules for testing fundamental physics
- Sources of cold (4K) gaseous molecular samples

Teaching:
- Introductory courses in quantum mechanics, atomic physics, nanophotonics.
- Physics lab modules (variety of physics experiments & introductory C/C++)
- Robotics projects for 1st year students (participated in eurobot)
- Daily teaching and mentoring of doctoral students

Programming experience:

link to GitHub profile: https://github.com/Stok

Data analysis (Mathematica, daily use for 10yrs+): as experimental physicist, data analysis (basic manipulation and statistics, numerical fits), simulations and modelling of the experiment (e.g. numerical differential equation solving)

Full stack experiment control software developer (C# / .NET / Visual Studio, 10yrs+ at regular intervals): design, implementation and maintenance of experiment control software (backend, data acquition/storage and UI design) for atomic/molecular physics experiments. Occasionally write firmware for microcontrollers (in C, IAR)

Natural language parsing (Scala, couple months, part time):
developping and testing a plain-text parser.

Machine learning analyst (MATLAB, ~3 days/week for 10 months for undergraduate final research project): implementing and testing unsupervised learning algorithms ("Locally Linear Embedding" in particular) in preparation for studying olfactory perception in bees.

Miscellaneous & "one-off" programming projects (as was needed):
- **Mining data** from websites to automate tasks for local admin staff (**Python**, see blog post)
- A UI for remote control of experiments in **HTML5/Javascript**
- Regular use of **git** & svn.

Past Employment:

02/12 – 08/14: Postdoctoral Researcher
Laboratoire de Physique des Lasers, USPC, France

06/09 – 01/12: Postdoctoral Research Associate
Centre for Cold Matter, Imperial College London, UK

Education:

2005 – 2009: Ph. D. in Atomic, Molecular and Optical Physics
Centre for Cold Matter, Imperial College London, London, UK
http://workspace.imperial.ac.uk/ccm/public/Tokunaga_thesis.pdf

2001 – 2005: MSci in Physics (graduated with first class honours, 1:1)
Imperial College London, London, UK

Languages:

English: Mother tongue
French: Fluent: daily use for both research and teaching
CEFR C1 certification back in 2003

Also proficient in German & Japanese as lived in Berlin & Tokyo during childhood (~8yrs each).

For the moment, based in a suburb of Paris, France. Can work remotely, but also willing to relocate.
For more on work as an experimental physicist, see profiles on ResearchGate and LinkedIn.
References available on request.