Jeffrey L. Paulsen

Software Development, Data Analysis, and Physics

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I love creating analysis tools and putting them to practical application. I started my career inventing novel sensor technologies at UC Berkeley and in the oil industry. Since then, I have gone on to develop analysis software for a wide variety of applications; such as for product design and manufacturing at Google/NEST, and digital ad metrics at Tracer. I look forward to continuing my career creating insights from data.

Experience

Tracer: New York, NY **Software Platform Engineer**: March 2020 - Present
Fullstack software engineer for Tracer's adtech data platform for data ingest and their user app (Django backend / Ember frontend). Development utilized technologies including Postgress, aws s3, aws lambda.

PreData: New York, NY **Software Platform Engineer**: Oct 2019 - Dec 2019
Software platform engineer focusing on systems performance optimization, customer metrics, and frontend testing. (Python, Django, pandas)

Zoox: Foster City, CA **Software Engineer**: Oct 2018 - Sept 2019
Ownership for the software related development, testing, and support of several networking and telecommunication systems for autonomous vehicles and for data ingest. (Python, C/C++, BASH)

Zenith at NEST (Google): Palo Alto, CA **Sensors Software Engineer:** *May 2017 – Oct 2018*
Software, firmware and tester development for sensor evaluation, product development, data analysis, and manufacturing utilizing a variety of software build, version control tools and languages (e.g. C/C++, Python, Obj-C).

Schlumberger-Doll Research, Boston, MA USA **Research Scientist,** *Dec 2009 – Sept 2015*
R&D for Schlumberger's commercial NMR measurements to characterize oil reservoir rocks and fluids including laboratory techniques and sensors for use within oil wells.

- Prototyped new MR sensors and analysis methods for oil well applications, focusing on improving their speed, sensitivity, and interpretation.
- Developed new measurement applications and data analysis schemes.
  - Created novel diffusion based encoding schemes and analytical pulse sequence analysis tools.
  - Adapted compress sensing data reconstruction to speed up imaging measurements (4-16x).
  - Developed methods to infer oil composition and production potential.
- Collaborated with multiple academia labs in chemistry, physics and engineering to adapt tracers and techniques used in medical MRI, and create miniaturized single chip hardware.
- Mentored and trained 9 Interns
- 11 Patents, +14 Publications

University of California, Berkeley, CA USA
Graduate Student Researcher, *Nov 2005 - Oct 2009*
Portable NMR sensors and the MRI imaging of microfluidics.

- Invented and built a portable NMR sensor with a large effective detection volume.
- Developed a method for high-resolution MRI flow imaging of microfluidic devices.

Education

Pennsylvania State University, State College, PA USA **(GPA:** 3.92, *with Honors in Chemistry***)**
BS, Mathematics and Chemistry, *2001 - 2005*

- **Thesis:** "Investigating a Monte Carlo Method for Simulating Gas Phase Reactions"

University of California, Berkeley, CA USA **(GPA:** 4.0)
Ph.D., Physical Chemistry, *Aug 2005 - Oct 2009*

- **Thesis:** "The Design and Application of an Adjustable NMR Sensor and The MRI Imaging of Flow in Microfluidics with Remote Detection."
- **Advisor:** Alexander Pines

Skills

Programming: Python (Pandas / SciPy), git, Obj-C, Matlab, C/C++, Matlab
Data: Signal Processing, Statistical Process Control, Multi-dimensional data analysis, Compressed Sensing, Fourier Analysis
R&D: Sensors, Physics NMR/MRI

Honors Giulio Cesare Borgia Prize, MRPM 12, *Wellington New Zealand, Feb. 2014*
Phi Beta Kappa*, 2004*

Publications 22 Journal Publications
11 Patents
5 Conference Talks

for a complete list please see: https://jlp403.github.io//patents_talks_publications.html