

Zhengqing (James) Chen

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OBJECTIVE	A position as data scientist or machine learning engineer	
EDUCATION	<p>PhD Mathematics, Clarkson University, Potsdam, NY 2012 - 2017 Concentration: partial differential equations, complex variables Thesis: Solution of Quasilinear PDEs for Balanced Atmospheric Flows</p>	
SKILLS	Programming (Python, R, Matlab, Java), Statistics, Machine Learning, NLP	
EXPERIENCE	<p>Manager, Machine Learning Engineer Mar 2021 - present Machine Learning Engineer/Data Scientist Jun 2018 - Mar 2021 Pfizer, 235 E 42nd St, New York, NY 10017</p> <ul style="list-style-type: none">• Conduct machine learning proof-of-concepts, lead production of state-of-the-art intelligent solutions that deliver business values, and continuously innovate on behalf of business• Drive vision of the machine learning team in areas of fundamental algorithms, NLP, computer vision, machine learning platforms/infrastructure• Lead a small team of DevOps engineers to support machine learning Ops and software development• Participate in other relevant affairs e.g. corporate machine learning/AI education, corporate Python programming training, mentoring junior team members/interns, etc• Sample work:<ul style="list-style-type: none">– <i>UK supply monitoring suggestion engine.</i> Delivered a machine learning system to suggest next actions based on monthly supply monitoring results for Pfizer UK Trade. Increased UK market analysts' monitoring efficiency by at least 60%. Technologies: machine Learning (end-to-end pipeline, model training/hosting/serving/maintenance). Role: During proof-of-concept led a team of data science interns to investigate feasibility of machine learning solution. During production architected overall system, implemented core machine learning algorithm (feature engineering, model training, producing interpretable machine predictions), led a team of data scientists/software engineers to deliver whole system on time, on budget.– <i>Search engine for manufacturer evaluation.</i> Delivered a search engine that uses machine learning to select critical intelligence from massive public information on potential partner companies and their assets for Pfizer Global Business Development's merging/acquisition decision. Technologies: Web Scraping, text vectorization, text similarity, Latent Semantic Indexing for information relevance ranking, Elasticsearch, BERT-based reading comprehension. Role: Implemented core algorithm on information filtering and ranking in the proof-of-concept phase; supervised a team of developers building out the production system.– <i>Document comparison</i> (proof of concept). Developed software tool to compare two documents, finding all text differences down to character, punctuation level and producing quantitative comparison report. (For legal/compliance reasons, certain pairs of documents must have identical	

- contents.) Applied optical character recognition, fundamental algorithms (e.g. longest matching substrings).
- *Content auto-population* (proof of concept). Investigated feasibility to auto-populate sections of new documents from existing dossier using Latent Semantic Analysis.

<i>Data Scientist</i> NYC Data Science Academy	Jan 2018 - Apr 2018
<ul style="list-style-type: none"> • Consulted with a Fortune-500 beverage company. Solved their key business question that leads to better understanding of consumers' beverage flavor preferences by using beverage ordering data to identify the underlying random process (Poisson process) and translating that information into business action. 	Aug 2012 - Jul 2017

Graduate Research Assistant
Department of Mathematics, Clarkson University, Potsdam, NY

- Participated in two National Science Foundation (NSF) research projects on mathematical modeling of atmospheric dynamics, NSF-AGS 1601628 and 1147431. Research work consisted of algorithm and theoretical development.
- For the algorithm part, developed a fast algorithm to solve differential equations numerically for a particular class of geophysical problems: balanced rotational flows at steady state.
- For the theoretical part, extended classical Fourier transform and Green's function theory by introducing a novel transform method.

OTHER INFO

A few publications during math PhD (not data science/machine learning related):

- **A Dynamical Explanation of the Topographically Bound Easterly Low-Level Jet Surrounding Antarctica*, Nov 2017, Journal of Geophysical Research - Atmospheres.
- **Topographically Bound Low-Level Jet Surrounding Antarctica*, Jan 2017, AMS 14th Conference on Polar Meteorology and Oceanography. **Introducing the novel Fokas' transform method*, Jan 2017, AMS-MAA Joint Mathematics Meeting 2017.