www.alvinkerber.net
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Alvin Kerber

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Employment

2017 – present **Facebook** — Research Scientist

Instagram Ads Ranking, Core Optimization (2019 – present)

- Individually delivered features, models, and ranking stack treatments that improved overall IG ads revenue by 1% or more each year.
- Applied cutting-edge ML techniques in deep learning, clustering, graph learning, representation learning, content understanding, and Poincare / hyperbolic embedding.
- Responsible for success of data mining / feature eng area throughout IG ads. Mentored, steered direction, and helped unblock all feature projects across the org. Reviewed all proposed features for ranking impact and return on infra cost.
- Led refactoring and migration of complex legacy IG feature infrastructure, enabling 10+ follow-up signal mining / feature eng projects. Influenced org-level planning and priorities in the separate ads ML infra org. Debugged performnce regressions and migration blockers requiring multi-week investigation.
- Responsible for quality, stability, and resource consumption of data pipeline codebase throughout IG ads. Established new 10-member data oncall across the org, created expectations and runbook, and built org-wide support structure to ensure oncall success.

ML for Developer Observability (2017 – 2019)

- Shipped 3 green-field internal tools to provide internal situational recommendations and insights to engineers based on previous engineers' behavior. Recommendations were also integrated into company-wide oncall hub and internal search tools.
- Owned and drove ML direction, modeling approaches, and end-to-end recommendation system architecture on team of 4 engineers.
- Used collaborative filtering, clustering, heuristics, and semi-supervised learning to extract insights from large-scale unlabeled employee behavior data.

2015 – 2016 **Delphix** — Member of Technical Staff

- Owned and drove incremental development, production stability, and modernization for the Provisioning component of Delphix's Oracle data platform, used in 50+ Fortune 500 companies' daily workflows and required for over 60% of company revenue.

2015 **Delphix** — Software Engineering Intern

2014 **Google** — Software Engineering Intern, Machine Learning

Education

2011 – 2017 **PhD Mathematics** — University of California, Berkeley

- Thesis: *Quasi-Fuchsian surface subgroups of infinite covolume Kleinian groups.*
- GPA: 3.92.

2007 – 2011 **ScB Mathematics** — Brown University

- *Phi Beta Kappa, magna cum laude, department honors.*
- GPA: 3.86. Math GPA: 4.00. CS GPA: 4.00.

Projects

Emulator/assembler for Knuth's MIX machine (C++). 1970s Unix-like OS (C and x86 assembly). Graph library for pseudo-Anosov conjugacy (Haskell). Compiler for simplified Haskell subset (OCaml, incomplete).

Languages

Python, SQL, C, C++. *Also familiar with*: R, Pandas, NumPy, Scikit-learn, PyTorch, Java, PHP, JavaScript, OCaml, Haskell, Lisp, Rust, Fortran, x86 asm, operating systems, distributed systems, Hive, Presto, Spark.