Ebrahim M. Songhori

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Summary

- Experienced Software Engineer enthusiastic in machine learning engineering and research.
- Experience in top industry research lab like **Google DeepMind** and record of innovation and publications, e.g., paper published at **Nature**.
- Strong engineering professional skilled in Machine Learning, Reinforcement Learning, Ad Serving and Indexing.

Employment Experiences

- **Senior Software Engineer at Google DeepMind**, Mountain View, CA 2019—
  - Member of Google DeepMind's Machine Learning for Systems team which applies modern machine learning techniques to optimize and improve computer systems.
- **Software Engineer at Google Shopping Ads**, Mountain View, CA 2017–2019
  - Developed the infrastructure for a two-tower deep learning solution for low-latency and highly accurate ads retrieval in Google Shopping.
- **Software Engineer Intern at Google**, Mountain View, CA Summer 2016
  Developed an evaluation pipeline for retrieval using deep neural networks for Google Shopping.
- **Software Engineer Intern at Google**, Mountain View, CA Summer 2015
  Developed an intelligent monitoring and alerting system for Google Shopping Infrastructure.

Technical Skills

- **Machine Learning**: Deep Learning, Deep Reinforcement Learning.
- **Programming Skills:** Python, C/C++.
- **Other technologies:** TensorFlow, Vizier, Protocol Buffer, Bigtable (NoSQL Database), MapReduce, Git, SQL, Amazon AWS.

Education

- **Ph.D. in Electrical and Computer Engineering** 2015—2017
  Rice University, TX.
  Supervisor: Prof. Farinaz Koushanfar (University of California, San Diego)
  Thesis Title: "TinyGarble: Efficient, Scalable, and Versatile Privacy-Preserving Computation Through Sequential Garbled Circuit."
  Visitor student at University of California, San Diego, CA, 2015—2017.
  An open-source and academic framework for privacy-preserving computation based on the Garbled Circuit protocol and hardware synthesis (available in TinyGarble Github).
- **M.Sc. in Electrical and Computer Engineering** 2012—2014
  Rice University, TX.
- **B.Sc. in Computer Engineering** 2007—2011
  University of Tehran, Iran.

Selected Publications and Patents

- Mirhoseini, Azalia, Anna Goldie, Mustafa Yazgan, Joe Wenjie Jiang, **Ebrahim Songhori**, Shen Wang, Young-Joon Lee et al. "A graph placement methodology for fast chip design." Nature 594, no. 7862 (2021): 207-212.
- Goldie, Anna Darling, Azalia Mirhoseini, **Ebrahim Songhori**, Wenjie Jiang, Shen Wang, Roger David Carpenter, Young-Joon Lee et al. "Generating integrated circuit placements using neural networks." U.S. Patent Application 17/555,085, filed April 7, 2022.
- Zhang, Dan, Safeen Huda, **Ebrahim Songhori**, Kartik Prabhu, Quoc Le, Anna Goldie, and Azalia Mirhoseini. "A full-stack search technique for domain optimized deep learning accelerators." In Proceedings of the 27th ACM ASPLOS, pp. 27-42. 2022.
- Riazi, M. Sadegh, Christian Weinert, Oleksandr Tkachenko, **Ebrahim M. Songhori**, Thomas Schneider, and Farinaz Koushanfar. "Chameleon: A hybrid secure computation framework for machine learning applications." In Proceedings of the 2018 on Asia Conference on Computer and Communications Security (ASIACCS), pp. 707-721. 2018.
- **Songhori, Ebrahim M.**, Siam U. Hussain, Ahmad-Reza Sadeghi, Thomas Schneider, and Farinaz Koushanfar. "TinyGarble: Highly compressed and scalable sequential garbled circuits." In Security and Privacy (SP), 2015 IEEE Symposium on, pp. 411-428. IEEE, 2015.

Awards and Honors

- **PhD Student Fellowship**, Houston, TX 2012
  Rice University ECE Graduate Fellowship.
- **Valedictorian**, Tehran, Iran 2011
  Ranked 1st in the class of 2011 Computer Engineering, University of Tehran.
- **Olympiad**, Tehran, Iran
  Ranked 5th in the National Scientific Olympiads for College Students in Computer Engineering. 2009
  Silver Medal in the National Scientific Olympiads for High School Students in Physics. 2006