

# Exhibit A

Curriculum Vitae

**BENJAMIN F. GOLDBERG**

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**Personal**

Born January 31, 1961, Las Cruces, New Mexico.

U.S. Citizen.

**Education**

Ph.D. in Computer Science, Yale University, 1988. Dissertation: "Multiprocessor Execution of Functional Programs."

M.S. and M.Phil in Computer Science, Yale University, 1984.

B.A. with Highest Honors in Mathematical Sciences, Williams College, Cum Laude, Phi Beta Kappa, Sigma Xi, June 1982. Honors Thesis: "Theory and Implementation of an Automatic Program Verifier."

**Employment**

Associate Professor (Tenured), Courant Institute of Mathematical Sciences, Department of Computer Science, New York University. September 1994 – Present.

Invited Professor, Ecole Normale Supérieure, Paris, France. June 2007 – July 2007 and June 2003 – July 2003.

Director of Graduate Studies (for the MS programs), Department of Computer Science, New York University. September 2009 – August 2012 and September 2014 – present.

Director of Undergraduate Studies, Department of Computer Science, New York University. September 1995 – August 1998 and September 2003 – August 2006.

Visiting Professor, Institute National de Recherche en Informatique et en Automatique (INRIA), Rocquencourt, France. September 1994 – August 1995.

Assistant Professor, Courant Institute of Mathematical Sciences, Department of Computer Science, New York University. September 1987 - August 1994.

**Expert Testimony at Trial or Deposition in the Past Five Years**

Retained by Sheppard Mullin on behalf of Healthplan Services, Inc. in the matter of *Blue Shield of California v. Healthplan Services*, U.S. District Court for the Northern District of California, San Francisco Division. Case No. 3:18-cv-3730, August 2019-present.

Retained by Goodwin Procter on behalf of 2Wire, Inc. in the matter of *TQ Delta v. 2Wire*. U.S. District Court for the District of Delaware, Case No. 13-cv-01835-RGA. February 2020-present.

Retained by Kirkland & Ellis on behalf of Samsung in the matter of *Certain Mobile Devices with Multifunction Emulators* (Dynamics v. Samsung). US International Trade Commission, Investigation No. 337-TA-1170. November 2019 – November 2020.

Retained by Quinn Emanuel on behalf of Opticon in the Matter of *Certain Barcode Scanners, Scan Engines, Products Containing the Same, and Components Thereof* (Honeywell v. Opticon). US International Trade Commission, Investigation No. 337-TA-1165. August 2019 – January 2020.

Retained by Duane Morris on behalf of Target in the two matters of *Dyfan v. Target*, U.S. District Court for the Western District of Texas, Waco Division, case No. 6:19-cv-00179-ADA, August 2019 – December 2019 and case No. 6:21-cv-00114-ADA, July 2021 – present.

Retained by Morrison & Foerster on behalf of Spotify in the matter of *SISVEL v. Spotify (Inter Partes Review* before the USPTO). Case IPR2019-00521, October 2018 – October 2019.

Retained by Sidley Austin on behalf of Apple in the matter of *Omni MedSci v. Apple*, U.S. District Court for the Eastern District of Texas, Marshall Division. Case No. 2:18-cv-134, December 2018 – August 2019.

Retained by Morrison & Foerster on behalf of IEX Group in the matter of *Nasdaq v. IEX Group* (Covered Business Method patent review before the USPTO). Case CBM2018-00039, May 2018 – March 2020.

Retained by Kirkland & Ellis on behalf of Apple, by Sheppard Mullin on behalf of HTC, and by McDermott Will & Emery on behalf of ZTE in the Matter of *Certain LTE- And 3G-Compliant Cellular Communications Devices* (INVT v. Apple, HTC, and ZTE), US International Trade Commission Investigation No. 337-TA-1138. September 2018 – September 2019.

Retained by Seyfarth Shaw on behalf of Capstone Logistics in the matter of *Capstone Logistics v. Pedro Navarrete et al.* US District Court for the Southern District of New York, Civil Action No. 17-4819-GBD-BCM. June 2018 – July 2019.

Retained by Norton Rose Fulbright on behalf of Papa John's USA in the matter of *In Re Ameranth Patent Litigation*. U.S. District Court for the Southern District of California, Lead Case No. 3:11-CV-01810-DMS-WVG. December 2017-September 2018.

Retained by Latham & Watkins on behalf of Oracle in the matter of *Oracle v. Hewlett Packard Enterprise*. US District Court for the Northern District of California, San Francisco Division, Case No. 16-cv-01393-JST. July 2017 – Present.

Retained by Quinn Emanuel on behalf of StubHub in the matter of *Calendar Research v. StubHub et al.* US District Court for the Central District of California, Western Division – Los Angeles, Case No. CV 17-4062-SVW. September 2017-August 2018.

Retained by Arnold & Porter Kay Scholer on behalf of Google in the matter of *KlausTech v. Google*. US District Court for the Northern District of California, Oakland Division, Case No. C 10-05899 JSW. October 2015-January 2018.

Retained by Baker & Hostetler by intervenor IAC Search & Media in the matter of *Finjan v. Symantec*. US District Court for the Northern District of California, Oakland Division, Case No. 4:14-cv-02998-HSG. November 2017- January 2018.

Retained by Morrison & Foerster on behalf of Nikon in the Matter of *Certain Digital Cameras, Software, and Components Thereof* (Zeiss v. Nikon), International Trade Commission, Investigation No. 337-TA-1059. August 2017-January 2018.

Retained by Quinn Emanuel on behalf of Samsung, by Sheppard Mullin on behalf of HTC, and by Kilpatrick Townsend on behalf of Lenovo and Motorola Mobility in the matters of *Evolved Wireless v. Samsung*, *Evolved Wireless v. HTC*, and *Evolved Wireless v. Lenovo and Motorola Mobility*. US District Court for the District of Delaware, Civil Action Nos. 15-545-SLR-SRF, 15-543-SLR-SRF, and 15-544-SLR-SRF. November 2016- August 2017.

Retained by Norton Rose Fulbright on behalf of Priceline, Kayak, and Open Table in the matter of *IBM v. The Priceline Group et al.*, US District Court for the District of Delaware, Civil Action No. 1:15-cv-00137-LPS-CJB. June 2016-December 2017.

Retained by Andrews Kurth Kenyon on behalf of Viatech Technologies in the matter of *Viatech Technologies v. Microsoft*. US District Court for the District of Delaware, Case No. 14-1226-RGA. March 2015-June 2017.

Retained by Allen, Dyer, Doppelt, Milbrath & Gilchrist on behalf of Live Face on Web in the matter of *Live Face on Web v. Major League Builders*, US District Court for the Central District of California, Case No. CV15-9927 PA (AGRx), *Live Face on Web v. Full Service Vending*, US District Court for the Western District of Texas, San Antonio Division, Case No. 5:15-cv-00539-HJB, and *Live Face on Web v. Integrity Solutions*. US District Court for the District of Colorado, Case No. 1:16-cv-01627-KLM. October 2014-May 2020.

Retained by Cooley on behalf of Apple in the matter of *Odyssey Wireless v. Apple*. US District Court for the Southern District of California, Case No. 15-cv-1735-H-RBB. March 2016-October 2016.

Retained by Milbank Tweed on behalf of Apple in the matter of *Rembrandt Patent Innovations v. Apple*. US District Court for the Northern District of California, Case No. C 14-05094 WHA (Lead Case), Case No. C 14-05093 WHA (Consolidated Case). July 2015-May 2016.

Retained by Gibson Dunn & Crutcher on behalf of Facebook in the matter of *Campbell v. Facebook*. US District Court for the Northern District of California, Case No. 13-cv-05996-PJH (MEJ). October 2015-March 2016.

Retained by Kaye Scholer on behalf of Google in the matter of *ContentGuard v. Google* (Covered Business Method patent review before the USPTO). Case CBM2015-00040. August 2014 – January 2016.

Retained by Boies Schiller on behalf of InfoSpan in the matter of *InfoSpan v. Emirates NBD Bank*. US District Court for the Central District of California, Southern Division. Civil Action No. 8:11-CV-01062 JVS (ANx) September 2013 – August 2016.

### **Teaching Awards**

New York University "Golden Dozen" Award, 1992. Awarded to twelve faculty members in the entire College of Arts and Sciences for excellence in teaching.

### **Professional Activities**

Editorial Board, *The Computer Journal*. Published by Oxford University Press on behalf of the British Computer Society. 2007 – 2009.

Program Committee member: 2007 Symposium on Principles of Programming Languages (POPL)

External Review Committee member: 2013 Symposium on Principles of Programming Languages (POPL)

Program Committee member: 2001 Workshop on Practical Applications of Declarative Languages (PADL'01), ACM SIGPLAN'95 Conference on Programming Language Design and Implementation, 1995 ACM SIGPLAN Symposium on Partial Evaluation and Semantics-Based Program Manipulation (PEPM '95), 1995 International Workshop on Memory Management (IWMM'95), ACM SIGPLAN'93 Conference on Programming Language Design and Implementation.

Review Panel Member, National Science Foundation, January 1998 and January 2000.

Official Collaborator, Los Alamos National Laboratory, Computing and Communications Division.  
Member, Association for Computing Machinery and ACM Special Interest Group on Programming Languages (SIGPLAN).

Referee for: ACM TOPLAS, IEEE Computer, International Journal of Parallel Programming, Software Practice and Experience, Computational Intelligence, ACM TOCS, ACM Computing Surveys, etc.

Referee for a variety of ACM and IEEE conferences.

### **Journal Papers**

"Translation and Run Time Validation of Optimized Code", with L. Zuck, A. Pnueli, C. Barrett, Y. Fang, and Y. Hu, *Formal Methods in System Design*. 27(3): 335-360, November 2005

"VOC: A Methodology for Translation Validation of Optimizing Compilers", with L. Zuck, A. Pnueli, and Y. Fang. *Journal of Universal Computer Science*, March 2003.

"A Syntactic Method for Finding Least Fixed Points of Higher-Order Functions over Finite Domains", with Tyng-Ruey Chuang. *Journal of Functional Programming*. Vol. 7, No. 4, pp. 357-394, July 1997

"Functional Programming Languages", in ACM 50th Anniversary Issue of Computing Surveys. March 1996.

"Order-of-demand analysis for lazy languages", with Young-Gil Park. *Information Processing Letters*, Vol. 55, 1995, pp. 343-348.

"Static Analysis for Optimizing Reference Counting", with Young-Gil Park. *Information Processing Letters*, Vol. 55, 1995, pp. 229-234.

"Multiprocessor Execution of Functional Programs", *International Journal of Parallel Programming*, Vol. 17, No. 5, October 1988.

"Distributed Execution of Functional Programs Using Serial Combinators," with P. Hudak, *IEEE Transactions on Computers*, Vol. C-34, No. 10, October 1985, pp. 881-891.

### **Books or Chapters in Books**

"Functional Programming Languages", in *Handbook of Computer Science and Engineering*, CRC Press, Inc. 1996.

### **Publications in Proceedings of Refereed Symposia**

"Translation Validation of Loop Optimizations and Software Pipelining in the TVOC Framework". *Proceedings of the 17<sup>th</sup> International Static Analysis Symposium (SAS 2010)*, September 2010.

"TVOC: A translation validator for optimizing compilers", with C. Barrett, Y. Fang, Y. Hu, A. Pnueli, and L. Zuck. *Proceedings of the 17th International Conference on Computer Aided Verification (CAV '05)*, July 2005.

"Theory and algorithms for the generation and validation of speculative loop optimizations", with Y. Hu and C. Barrett. *Proceedings of the 2nd IEEE International Conference on Software Engineering and Formal Methods (SEFM)*, September 2004.

"Into the Loops: Practical Issues in Translation Validation for Optimizing Compilers", with L. Zuck and C. Barrett. *Proceedings of the Third International Workshop on Compiler Optimization meets Compiler Verification (COCV)*. April 2004.

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