Samuel David Perli

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Work Experience

Gladstone Institutes — Bioinformatics Scholar
San Francisco, CA — September 2016 - Present
Mentor: Shinya Yamanaka MD, PhD
Gladstone Institute of Cardiovascular Disease (GICD)
University of California San Francisco (UCSF)

Massachusetts Institute of Technology — Postdoctoral Scholar
Cambridge, MA — June 2015 - August 2016
Mentor: Timothy K. Lu MD, PhD
Synthetic Biology Group (SBG)
Research Laboratory of Electronics (RLE)
Department of Electrical Engineering and Computer Science

Education

Massachusetts Institute of Technology — Doctor of Philosophy (Ph.D.)
Cambridge, MA — Jan 2011 - June 2015
Mentor: Timothy K. Lu MD, PhD
Synthetic Biology Group (SBG)
Research Laboratory of Electronics (RLE)
Department of Electrical Engineering and Computer Science
Thesis: An Integrated CRISPR-Cas Toolkit for Engineering Human Cells
– Awarded the **Dimitris N. Chorafas award for outstanding PhD thesis**

Massachusetts Institute of Technology — Master of Science (S.M.)
Cambridge, MA — Aug 2008 - Jun 2010
Computer Science and Artificial Intelligence Laboratory (CSAIL)
Department of Electrical Engineering and Computer Science
Thesis: PixNet: Designing Interference-free Wireless Links Using LCD-Camera Pairs

Indian Institute of Technology Madras — Bachelor of Technology (B. Tech.)
Chennai, India — Aug 2004 - Jun 2008
Department of Electrical Engineering
– Awarded the **Institute Silver Medal** for best academic record in the department

Publications

"Critical roles of translation initiation and RNA uridylation in endogenous retroviral expression and neural differentiation in human pluripotent stem cells
Kazutoshi Takahashi, Daeun Jeong, Songnan Wang, Megumi Narita, Xuemei Jin, Mio Iwasaki, Samuel D. Perli, Bruce Conklin, Shinya Yamanaka
Cell Reports, 2020

"Ratiometric logic in living cells via competitive binding of synthetic transcription factors"
Samuel D. Perli and Timothy K. Lu
ACM NanoCom 2017

"Continuous Genetic Recording with Self-Targeting CRISPR-Cas in Human Cells"
Samuel D. Perli, Cheryl H. Cui and Timothy K. Lu
Science, 2016

"Multiplexed barcoded CRISPR-Cas9 screening enabled by CombiGEM"
Alan S L Wong, Gigi C G Choi, Cheryl H Cui, Gabriela Pregernig, Pamela Milani, Miriam Adam, Samuel D Perli, Samuel W Kazer, Aleth Gaillard, Mario Hermann, Alex K Shalek, Ernest Fraenkel, Timothy K Lu
Proceedings of the National Academy of Sciences, U.S.A, 2016

"Foundations and Emerging Paradigms for Computing in Living Cells"
Kevin C. Ma, Samuel D. Perli and Timothy K. Lu
Journal of Molecular Biology, 2016

"Analog synthetic gene networks"
Samuel D. Perli and Timothy K. Lu
ACM NanoCom 2016

"Multiplexed and Programmable Regulation of Gene Networks with an Integrated RNA and CRISPR/Cas Toolkit in Human Cells"
Lior Nissim*, Samuel D. Perli*, Alexandra Fridkin, Pablo Perez-Pinera, and Timothy K. Lu
Molecular Cell, May 2014
– Featured as the **Cover article**

"Tunable and Multi-Functional Eukaryotic Transcription Factors Based on CRISPR/Cas"
Fahim Farzadfard, Samuel D. Perli, and Timothy K. Lu
ACS Synthetic Biology, August 2013

"Designing Extensible Protein-DNA Interactions for Synthetic Biology"
Kristjan E. Kaseniit, Samuel D. Perli and Timothy K. Lu
Proc. of the IEEE Biomedical Circuits and Systems Conference (BioCAS), November, 2011

"PixNet: Designing Interference-free Wireless links using LCD-Camera pairs"
Samuel D. Perli, Nabeel Ahmed and Dina katabi, ACM MobiCom 2010

"PixNet: LCD-Camera pairs as communication links"
Samuel D. Perli, Nabeel Ahmed and Dina Katabi, ACM SIGCOMM 2010
– Won the second place in the **ACM, Student Research Competition**

"Interference Alignment and Cancellation"
Shyamnath Gollakota, Samuel D. Perli and Dina katabi, ACM SIGCOMM 2009

"Network Coding for TCP Throughput Enhancement over a Multi-Hop Wireless Network" P. Samuel David and Anurag Kumar, IEEE COMSWARE 2008
– Won the **Best Paper award**

Patents

"Self-targeting genome editing system"
Timothy K. Lu, Samuel D. Perli, Cheryl H. Cui. International Patent Application: PCT/US2016/032348

"Methods and compositions for the production of guide RNA"
Timothy K. Lu, Lior Nissim, Samuel D. Perli. International Patent Application: PCT/US2015/024196

"Method and system for coding information on a roadway surface subject to motion blur"
Raymond Yim, Samuel David Perli, Fatih Porikli, Jinyun Zhang, USPTO #8,378,799

"A method for transmitting information using LCDs and image sensors"
Samuel David Perli, Nabeel Ahmed, Dina Katabi. Provisional Patent filed

Editorial Board

International Journal of Bioinformatics and Biological Systems
Associate Editor 2015– Present
Bioinformatics, Computational Biology and Synthetic Biology

International Journal of Biophysics and Bioenergetics
Editorial Board 2015– Present
Molecular Dynamics, Synthetic Biology

Conference Committees

ACM NanoCom 2017 — Chair
Washington D.C., USA — September 2017
Synthetic Computation in Living Cells

ACM NanoCom 2016 — Co-chair
New York City, USA — September 2016
Synthetic Computation in Living Cells

Invited Talks

ExVivogen: Biological Insights for Drug Discovery — Presentation
UCSF Entrepreneurship Center — April 2019
San Francisco, USA

The Role of EIF4G2 in Stem Cell Biology and Protein Translation — Seminar
Gladstone Institutes of Data Sciences and Biotechnology (GIDB) — May 2018
San Francisco, USA

Computational Approaches in Synthetic and Molecular Biology — Seminar
Center for Optimization and Statistical Learning — May 2018
Northwestern University, USA

Recording Information in Living Cells — Research Presentation
Spiez Convergence — September 2016
Switzerland

Synthetic Biology for Computation — Research Presentation
Workshop on EDA/BDA Interaction Roadmap — August 2016
Newcastle, UK

Teaching Experience

MCB 187 Genome Editing - Progress and Frontiers — Guest Lecturer
MCB, Harvard GSAS — April 2016
Synthetic Biology Applications of Genome and Epigenome Editing

6.829 Computer Networks — Teaching Assistant
EECS, MIT — Aug 2010 - Dec 2010
Prepared and delivered biweekly recitations
Designed and organized biweekly networking lab sessions

Awards and Honors

Dimitris N. Chorafas award for **outstanding PhD thesis in EECS,** 2015
Thomas and Sarah Kailath Fellowship, MIT, $2013 - 2014, 2011 - 2012$
Harvey Fellowship, Mustard Seed Foundation, $2010 - 2013$
Won the **second place in Student Research Competition, ACM SIGCOMM,** 2010
Won the Best paper award in IEEE COMSWARE, 2008
MIT Presidential Fellowship, $2008 - 2009$
Stanford Graduate Fellowship, 2008 - declined
Princeton University Engineering Fellowship, 2008 - declined
Siemens Prize for best academic record in Electrical Engg., IIT Madras $2004 - 2008$
Awarded the **Institute Silver Medal** for exceptional academic performance at IIT Madras
Placed among the top 0.1% of the students appeared for
Indian National Mathematics Olympiad 2004
Indian National Physics Olympiad 2004
Secured 11th rank in the **Indian National Science Olympiad** 2004
Secured 12th position in the **Indian National Geo Map Quiz** 2002

Posters

"Multiplexed and Programmable Regulation of Gene Networks with an Integrated RNA and CRISPR/Cas Toolkit in Human Cells"
Fourth Annual Synthetic Biology Center Symposium, January 2015

"Multiplexed and Programmable Regulation of Gene Networks with an Integrated RNA and CRISPR/Cas Toolkit in Human Cells"
Synthetic Biology: Engineering, Evolution & Design, July 2014

"Multiplexed and Programmable Regulation of Gene Networks with an Integrated RNA and CRISPR/Cas Toolkit in Human Cells"
Synthetic Biology Boston (SB^2), June 2014

"PixNet: LCD-Camera pairs as communication links"
ACM SIGCOMM, September 2010

References

Sinya Yamanaka, MD, PhD
2012 Nobel Laureate in Physiology or Medicine
L.K. Whittier Foundation Investigator in Stem Cell Biology
Gladstone Institutes
Director and Professor, Center for iPS Cell Research and Application (CiRA)
1650 Owens Street, San Francisco, CA 94158
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Timothy K. Lu, MD, PhD
Associate Professor
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Dina Katabi, PhD
Professor
Computer Science and Artificial Intelligence Lab
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