Salil Bhate, MA (Cantab.), MMath., MS

D.O.B. 2nd May 1992 Nationality: UK
bhate@stanford.edu

EDUCATION

Stanford University, Sep 2015 -: Bioengineering MS/PhD program
MS in synthetic biology, machine learning and statistics.
PhD Supervisor: Garry Nolan.
Thesis: Representation and inference of tissue behavior from multiplexed imaging data.
University of Cambridge, 2014: MMath (with distinction):
Part III Mathematical Tripos. Thesis: "Statistical properties of geometric flows and equidistribution". Supervisor: Prof. Vlad Markovic FRS.
University of Cambridge, 2013: BA Mathematics (first class honours):
Mathematical Tripos: top 10% in each year.

PUBLICATIONS (* = first-author)

Nature Communications, in press June 2021*: Subcellular localization of drug distribution by super-resolution ion beam imaging.* X. Rovira-Clave et al.
**** European Journal of Immunology, Jan. 2021****: Highly multiplexed tissue imaging using repeated oligonucleotide exchange reaction.*
J. Kennedy-Darling*, S.S. Bhate*, J.Hickey* et al.
Journal of Clinical Investigation, Jan. 2021*: Landscape of coordinated immune responses to H1N1 challenge in humans.* Z. Rahil et al.
**** Cell, Aug. 2020*** *: Coordinated cellular neighborhoods orchestrate antitumoral immunity at the colorectal cancer invasive front.*
C. Schuerch*, S.S. Bhate*, G. Barlow*, D. Phillips* et al.
Cell Systems, Oct. 2018*: Systematic identification of factors driving cell-fate conversion using CRISPR activation screens.* Y. Liu et al.
Cell, Aug. 2018*: Deep profiling of mouse splenic architecture with CODEX multiplexed imaging.* Y.Goltsev et al.
BBF RFC 106, Mar 2015*: A Standard Type IIS Syntax for Plants.* V. Rutten et al.

UNDER REVIEW

**** May 2021****: Compositional assembly of cellular neighborhoods enables the specialization of immune function and its reprogramming by tumors.*
S.S. Bhate*, G. L. Barlow* et al.
medrXiv Dec. 2020*: Immune cell topography predicts response to PD-1 blockade in cutaneous T cell lymphoma.*
D. Phillips et al.
ResearchSquare Feb. 2021*: A tissue atlas of ulcerative colitis to guide TNF inhibitor therapy*
A. Mayer et al.

CONFERENCES

Neural Information Processing Systems, Los Angeles, Dec. 2017
Poster in computational biology workshop:"Unsupervised representation learning to interrogate cellular behaviours in 46-parameter imaging data"
Poster in computational biology workshop:"A multi-modal neural network for learning cis and trans regulation of stress response in yeast"
Keystone Single Cell 'Omics, Stockholm, May 2017
Poster: "Single-cell reference maps of tissue architecture using multiparameter imaging and unsupervised representation learning with neural networks"
(SBSA Travel Award, $1000)

AACR-CIMT-EATI-CRI International Cancer Immunotherapy Conference, New York, Sep. 2016
Awarded short talk: "Automatic identification of cellular niches using multiparameter imaging and deep learning"
(SBSA Travel Award, $1000, BioX Oral Presentation travel award $500)
Plants Workshop, iGEM Giant Jamboree, Nov. 2014, Boston: Conducted technical session on *M. polymorpha* in the plants for iGEM workshop.
Gold Medal, iGEM Nov. 2014, Boston: competed as member of University of Cambridge-JIC team

AWARDS AND SCHOLARSHIPS

Bruce and Elizabeth Dunlevie Bio-X Stanford Interdisciplinary Graduate Fellowship, 2016: full tuition and stipend support at elevated rate, 3 years.
Clark Bioengineering Fellowship, 2015: full tuition and stipend support, 2 years.
Cambridge PMC Bursary, 2014: £2000 grant for interdisciplinary collaboration.
Senior Scholarship Prize, (2011, 2012, 2013, 2014) for excellent performance in Parts IA, IB, II and III of the Math Tripos.
Best A-Level Performance, King Edward VI Grammar School, 2010.

TEACHING

Ethics of Biotechniology, Stanford, Spring 2018: BioE131 teaching assistant. Hoefer award for mentorship of student writers.
Synthetic Biology lab, Stanford, Fall 2017: BioE44 teaching assistant

EXPERIENCE

Intern, Atum Technologies, Apr. - June 2015
Protein engineering. Designed and performed high-throughput screen to optimize function of transposase variants in *S. cerevisiae*, finding several variants now in production.
Research assistant, Haseloff lab, Sep. 2014- Mar. 2015
Plant synthetic biology. Optimized constructs and protocols for electroporation of *M. polymorpha* spores.
Software engineering intern, FIS technologies, June - Sept. 2013
Implemented error logging tool in C# for credit reporting software.

SKILLS AND INTERESTS

Programming: C++, Python, R, C#, (modelling/machine-learning/software development). Tensorflow. Basic: SQL, Java.
Language skills: Marathi (Fluent). German (Intermediate), Hindi, Russian, Mandarin (elementary). Classical Greek, Latin (to UK A-level)
Other: Avid cyclist for leisure. Indian classical singing (Hindustani).

RELEVANT COURSEWORK

Stanford University: molecular and cellular bioengineering, microfluidics, deep learning for image recognition, deep learning for NLP, deep learning for genomics, modern applied statistics, graphical models, information theory, advanced reinforcement learning.
University of Cambridge: algebraic geometry, algebraic topology, commutative algebra, complex manifolds, symplectic topology, methods, quantum mechanics, fluid dynamics, complex analysis, linear analysis, probability and measure, graph theory, applied probability, logic and set theory, differential geometry, statistics.