

# Michael Figurnov

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I am a Senior Staff Research Scientist at Google DeepMind in London, UK. My research interests include deep learning, Bayesian methods, and machine learning for biology. I have worked on AlphaFold which has been recognized as the solution to the protein folding problem.

## Employment history

### Google DeepMind, London, UK

Senior Staff Research Scientist	2024-present
Staff Research Scientist	2021-2024
Senior Research Scientist	2019-2021
Research Scientist	2018-2019

### Higher School of Economics, Moscow, Russia

Research Fellow	2017
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### Lamoda.ru, Moscow, Russia

R&D engineer (part-time)	2013-2014
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### Ozon.ru, Moscow, Russia

Data Mining Researcher (part-time)	2011-2013
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## Selected publications

Please see <https://scholar.google.com/citations?user=qd0tOpQAAAAJ> for a full list of publications.

### **Accurate structure prediction of biomolecular interactions with AlphaFold 3** Nature, 2024

Josh Abramson, Jonas Adler, Jack Dunger, Richard Evans, Tim Green, Alexander Pritzel, Olaf Ronneberger, Lindsay Willmore, Andrew J Ballard, Joshua Bambrick, Sebastian W Bodenstein, David A Evans, Chia-Chun Hung, Michael O'Neill, David Reiman, Kathryn Tunyasuvunakool, Zachary Wu, Akvilė Žemgulytė, Eirini Arvaniti, Charles Beattie, Ottavia Bertolli, Alex Bridgland, Alexey Cherepanov, Miles Congreve, Alexander I Cowen-Rivers, Andrew Cowie, **Michael Figurnov**, Fabian B Fuchs, Hannah Gladman, Rishub Jain, Yousuf A Khan, Caroline MR Low, Kuba Perlin, Anna Potapenko, Pascal Savy, Sukhdeep Singh, Adrian Stecula, Ashok Thillaisundaram, Catherine Tong, Sergei Yakneen, Ellen D Zhong, Michal Zielinski, Augustin Žídek, Victor Bapst, Pushmeet Kohli, Max Jaderberg, Demis Hassabis, John M Jumper

### **Highly accurate protein structure prediction with AlphaFold** Nature, 2021

John Jumper\*, Richard Evans\*, Alexander Pritzel\*, Tim Green\*, **Michael Figurnov\***, Olaf Ronneberger\*, Kathryn Tunyasuvunakool\*, Russ Bates\*, Augustin Žídek\*, Anna Potapenko\*, Alex Bridgland\*, Clemens Meyer\*, Simon A. A. Kohl\*, Andrew J. Ballard\*, Andrew Cowie\*, Bernardino Romera-Paredes\*, Stanislav Nikolov\*, Rishub Jain\*, Jonas Adler, Trevor Back, Stig Petersen, David Reiman, Ellen Clancy, Michal Zielinski, Martin Steinegger, Michalina Pacholska, Tamas Berghammer, Sebastian Bodenstein, David Silver, Oriol Vinyals, Andrew W. Senior, Koray Kavukcuoglu, Pushmeet Kohli, Demis Hassabis\*

### **Monte Carlo Gradient Estimation in Machine Learning** JMLR, 2020

Shakir Mohamed\*, Mihaela Rosca\*, **Michael Figurnov\***, Andriy Mnih\*

### **Implicit Reparameterization Gradients**

**Michael Figurnov**, Shakir Mohamed, Andriy Mnih

NeurIPS, 2018  
(spotlight)

### **Spatially Adaptive Computation Time for Residual Networks**

**Michael Figurnov**, Maxwell D. Collins, Yukun Zhu, Li Zhang, Jonathan Huang, Dmitry Vetrov, Ruslan Salakhutdinov

CVPR, 2017

## PerforatedCNNs: Acceleration through Elimination of Redundant Convolutions

NeurIPS, 2016

Michael Figurnov, Aijan Ibraimova, Dmitry Vetrov and Pushmeet Kohli

## Education

### Bayesian Methods Research Group / Higher School Of Economics, Moscow, Russia

PhD in Computer Science 2013-2019

Topic: [Probabilistic method of adaptive computation time in neural networks](#)

Supervised by Dmitry Vetrov

### Lomonosov Moscow State University, Moscow, Russia

Specialist ( $\approx$ Master of Science) in Applied Mathematics and Computer Science 2008-2013

GPA 4.9/5.0, graduated with honours

## Internships and research visits

### Google Seattle, USA

Software Engineering Intern, hosted by Li Zhang July - Oct 2016

### University of Toronto, Canada

Visiting student, hosted by Ruslan Salakhutdinov Sep - Dec 2015

### Microsoft Research Cambridge, UK

Visiting student, hosted by Pushmeet Kohli Sep - Oct 2014

## Administrative duties

Co-organizer of the Bayesian methods of machine learning weekly seminar (jointly with Dmitry Vetrov, Dmitry Kropotov) 2013-2017

## Awards

2<sup>nd</sup> place (out of 85), Relevance Prediction Challenge, Yandex, 2011 2011

3<sup>rd</sup> place award, Intel ISEF 2008  
(worldwide scientific projects competition for high school students)

## Teaching experience

Moscow State University, Skoltech, Yandex's School of Data Analysis 2014-2015

Teaching assistant, Bayesian Methods of Machine Learning and Graphical Models courses

### Moscow State University

Sep 2014 - May 2015

Lead instructor, Machine Learning practical classes

## Languages

English (fluent)

Russian (native)