

# Georgios 'Yorgos' Katsikis

295 Beacon St, Apt 63 Boston MA 02116

☎ 650-387-4421 ✉ katsikis.g@gmail.com

🌐 <https://katsikisg.wixsite.com/yorgos>

🌐 <https://www.linkedin.com/in/georgioskatsikis>

## EDUCATION

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Stanford University 09/2010-01/2016  
**MSc/PhD in Mechanical Engineering, GPA: 4.02 /4.00**

National Technical University of Athens 09/2003-10/2008  
**Diploma in Mechanical Engineering, GPA: 9.44/10, 1<sup>st</sup> in class of 157 students (5-year program)**

## PROFESSIONAL EXPERIENCE

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**Postdoctoral Associate**, Massachusetts Institute of Technology (MIT), **Manalis Lab**, Boston, MA 09/2017- present

- Led a collaboration between MIT and Biomarin Pharmaceutical to develop nanofluidic MEMS platforms and instrumentation for high-throughput biophysical measurements of viruses for gene therapy, publishing in [ACS Nano Letters](#). Work highlighted in [cell & gene](#).
- Researched on [FDA-funded project for process control of bio-manufacturing](#) of Adeno-associated viruses (AAV), publishing review articles in [Molecular Therapy Methods & Clinical Development](#) and [Biotechnology Advances](#).
- Studying microfluidic phenomena for analyzing nanoparticles and cells using experiments, analytical theory and multiphysics simulations with COMSOL, publishing in [Nature Communications](#), [ACS sensors](#), [Nature Methods](#).
- Developed mathematical models of single-cell metabolism, publishing in [Nature Communications](#).
- Presented my research via invitations in conferences (Bioprocess International, Bioprocess Summit) and biotechnology companies (Waters Corporation, ThermoFisher Scientific).

**R&D Engineer**, **Carbon**, Redwood City, CA 01/2016- 09/2017

- Developed mechanical-fluidic prototypes using instrumentation, Solidworks CAD for [new 3-d printing concepts](#).
- Designed analytical models and finite-element algorithms to optimize the 3-d printing process.
- Developed new formulations of photopolymerizable resins with new properties.

**PhD Researcher**, Stanford University, **Prakash Lab**, Stanford, CA 07/2011- 01/2016

- Developed a microfluidic platform for manipulating water droplets using logic operations and magnetic fields. Published first-author journal papers in [Nature Physics](#), [Soft Matter](#) (Cover article), and [Physical Review E](#). PhD Work highlighted in [The New York Times](#), [BBC News](#), [Stanford News](#), [Wired](#) and other media.
- Filed two patents [US 10,316,872](#), [US 10,029,257](#).
- Gained hands-on experience in instrumentation (Arduino microcontrollers, sensors) and rapid prototyping.
- Developed soft lithography clean-room skills, created tools for image analysis/data processing, numerical models.
- Conducted biophysics research on human parasites: conducted high-speed video biological experiments, employed PIV techniques to analyze the swimming dynamics of the parasite causing the Schistosomiasis disease. Published work in [Nature Physics](#), also featured in [Stanford News](#), [Physics World](#) and other media.
- Co-developed a low cost (<20 cents), hand-powered centrifuge for disease diagnostics in developing countries, capable of speeds up to 125,000 revolutions per minute. Published this work in [Nature Biomedical Engineering](#), featured in [CNN](#), [the Economist](#), [Stanford News](#) and other media.

**Co-founder & Mentor**, **Portal Room** (Athens, Greece) 09/2013-present

- Have taught over 40 on-line workshops on writing Statement of Purpose letters for graduate school applications.

**Author** 09/2010-present

- Wrote a textbook (sole author) *Introduction to Machine design*, ISBN: 978-960-9400-22-0, 1<sup>st</sup>/2<sup>nd</sup> ed. 2010/2014.

## SKILLS

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- Programming and Instrumentation tools: MATLAB (including Simulink), Labview, C, Mathematica
- Computer Aided Design (CAD) / Circuit Design: Solidworks, AutoCad, EagleCad / Image Analysis
- Computational Commercial Packages: Fluent (fluid mechanics), COMSOL, ANSYS.
- Hands-on Skills: Lab electronics (Microcontrollers, sensors), MEMS, Soft photolithography, Machine Shop Skills
- 3-D computer animation (Solidworks Photoviewer) and graphic design (Adobe illustrator), LATEX

## AWARDS, INTERESTS & LANGUAGES

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**Awards:** [DARPA Riser 2015](#): one of 50 young scientists from the US to present their research in the DARPA Tech Forum. Finalist, [Collegiate Inventors Competition 2015](#): one of 6 PhD students from the US to showcase my PhD invention. Winner, 6-member team, Index Award 2017. Med-Tech AIF-Stanford Innovation award, 2016. Onassis Foundation, Leventis A.G. Foundation Scholarships for graduate studies in the US. State Scholarship Foundation & Technical Chamber of Greece "1st in class" awards for all years of undergraduate studies including 3 math awards.

**Interests:** Running, Cooking, Guitar. **Languages:** English (fluent), Spanish (fluent), German (basic), Greek (native).