



Kyriakos Flouris

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Languages

Greek ●●●●●
 English ●●●●●
 German ●●●●●
 French ●●●●●
 Spanish ●●●●●

Hard Skills

Theoretical Research
 Data acquisition/analysis
 Teaching
 Pytorch/Python ●●●●●
 C++ ●●●●●
 Latex ●●●●●
 Matlab/Mathematica ●●●●●
 Unix/gitHub ●●●●●

Soft Skills

Strong Work Ethic
 Communication
 Problem-Solving
 Flexibility/Adaptability
 Creative
 Self-Confidence
 Working Well Under Pressure

Experience

- 2019 – currently **Senior Research Scientist Computer Vision Lab** ETH Zürich
Research Position
- Developed, tested and implemented novel deep learning (ML) methods.
 - Research on generative modeling and AI
 - Research on computed tomography and medical imaging, simulational methods and data analysis.
 - Image processing summer school lecturer.
 - Scientific publications.
- 2015 – 2019 **Computational Physics for Engineering Materials** ETH Zürich
Doctoral Thesis – Research Assistant,
- Developed, tested and implemented fluid structure interaction with 2nd-order curved space lattice Boltzmann method.
 - Research on Dirac fermions in curved space and strained graphene sheets with curved space quantum lattice Boltzmann.
 - Research on geometrical topological condensed matter
 - Teaching assistant python and computing.
 - Courses in advanced field theories / condensed matter.
 - Scientific publications.
- 2014 – 2015 **Institute of Astronomy** ETH Zürich
Research Assistant,
- Part of the VLT/ Multi Unit Spectroscopic Explorer (MUSE).
 - Algorithm development.
 - Data Reduction, Quality Control and Analysis.
 - Teaching Assistant for Physics.
 - Followed courses in cosmology and particle and astrophysics.
- 2013 – 2014 **Laboratory for Scientific Computing** The University of Cambridge
Master Thesis,
- Water Droplet impingement on aircraft surfaces.
 - Applied numerical methods in solving the Euler equations in 2D (Finite Difference, C++).
 - Validation and implementation of existing advance codes (in collaboration).
 - High velocity scenarios never explored before numerically, code validation.

Education

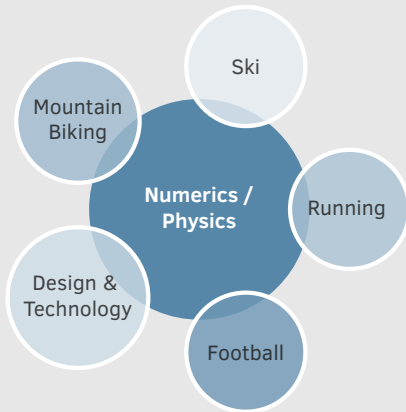
- Graduate
- 2015 – 2019 **Doctor of Sciences** ETH Zürich
 Computational Physics, January 2019, Flow and Dirac particles on curved and topological manifolds.
- 2017 **Honorary Master of Arts** The University of Cambridge
- 2013 – 2014 **Master of Science** The University of Cambridge, Downing College
 Physics, June 2014, Grade: 1st (70.0%)(GPA 4.0)
 Courses: Particle Physics, Atomic and Optical, Relativistic Cosmology and Astrophysics, Gauge Field Theory, Astroparticle, Non-Linear Optics.

Kyriakos Flouris

About Me

Computational and theoretical physicist with experience in solid state physics, differential geometry, fluid flow, curved space, applied mathematics and machine learning.

Extra Curricular



Undergraduate

- 2010 – 2013 **Bachelor of Science** The University of Cambridge, Downing College
Exp. and Theor. Physics, June 2013 Grade: 2.1 (67.5%)(GPA 3.7)
Courses: Year 1: Physics, Chemistry; Materials, Mathematics; Year 2: Physics, Mathematics; Year 3: Experimental and Theoretical Physics
- 2000 – 2008 **Secondary Education** The English School, Nicosia
GCE A-levels, Exp. and Theor. Physics, June 2008
Courses: Mathematics (Core, Further Pure, Mechanics, Statistics) (A* and A), Chemistry (A*), Physics (A*), Biology (A), Modern Greek (A*), 9 GCSEs (8 A*) including Maths, Sciences, History, Ancient Greek, English(B)

Teaching - Courseworks

- 2010 – 2019 **Projects**
Generative Modeling • Deep Learning • Scientific Computing • High velocity fluids Physics Labs Experiments • Ferrofluids • Particle Tracks • Numerical Methods (Excel, Matlab) • C++ and Unix Commands
- 2015 – 2019 **Teaching Assistant**
Physics • Python • Computing
- 2019 – 2021 **Lecturer**
Image Processing & Registration • EXCITE summer school ETHz
- 2018 – 2023 **Master and semester thesis co-supervisor**
Multiple occasions

Selected Publications

- | | | |
|------|---|----------------------------|
| 2023 | Explicitly Minimizing the Blur Error of Variational Autoencoders | ICLR 2023 |
| 2022 | The discriminative power and stability of radiomics features with computed tomography variations: task-based analysis in an anthropomorphic 3D-printed CT phantom | Investigative radiology |
| 2022 | Curvature-induced quantum spin-Hall effect on a Möbius strip | Physical Review B, APS |
| 2022 | Assessing radiomics feature stability with simulated CT acquisitions | Scientific Reports, Nature |
| 2018 | Confining massless Dirac particles in two-dimensional curved space | Physical Review B, APS |
| 2018 | Fluid structure interaction with curved space lattice Boltzmann | Computers & Fluids |

Other Employment

- 2008 – 2010 **National Guard of Cyprus** Nicosia, Cyprus
Second Lieutenant
- 2011, 2012, 2013, 2019 **Junior and Teen Camp Laax** Laax, Switzerland
Team leader

Awards & Honors

- | | | |
|---------|--|-----------------------------|
| 2014 | Master of Science, "First class grade" | The University of Cambridge |
| 2008 | Physics GCE A-Level Highest International Mark | edexcel |
| 2006 | 2nd best overall academic result for class of 2008 | English school Nicosia |
| 2006 | Physics IGCSE Highest International Mark | edexcel |
| 2006 | Mathematics award, bronze metal | Kangourou Cyprus |
| 2005-08 | Annual School Prizes for Outstanding Academic Achievement | English school Nicosia |
| 2002-03 | Best project in school year for Design and Technology awards | English school Nicosia |
| 2001 | Gold Metal for 2nd Annual Mathematics Olympiad in Cyprus | |

