

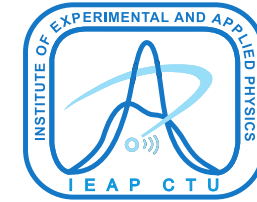
# Timeline of my 10 years at IEAP CTU and UCL

Petr Mánek<sup>1,2</sup>

<sup>1</sup>Institute of Experimental and Applied Physics, Czech Technical University, Prague

<sup>2</sup>Department of Physics and Astronomy, University College London

# My background



- **1994:** born, interested in computers since early years
- **2006:** freelance work (websites, mobile apps)
- **2008:** Junior Internet award, advocacy against cyberbullying, Youth European Panel at EP
- Several Internet companies in my teenage years
- **2013:** simultaneously enrolled at 2 universities in Prague:
  - F. of Electrical Engineering, CTU: artificial intelligence
  - F. of Mathematics & Physics, CU: high-perf. computing
  - Finished both, earned 2 bachelor and 2 master's degrees.



# Research in the industry?

- **2014:** co-founded indoor localization startup **Spaceti**
  - Main R&D contribution: BLE beacons, magnetometric fingerprinting.
  - Funded with a significant media footprint → began scaling up.
  - Expected to stay on as CTO, but R&D started phasing out for sales.



# Research in the academia?

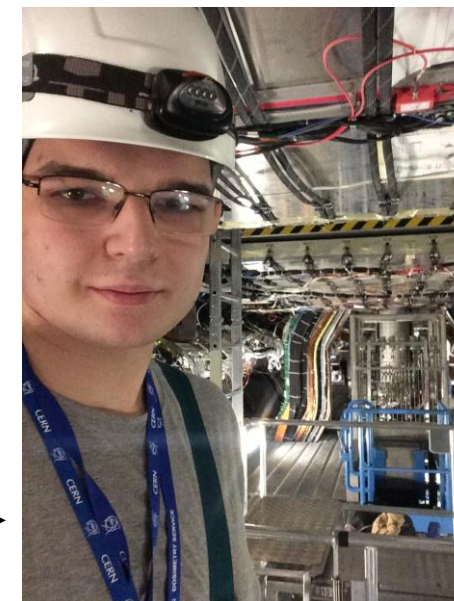
Presenting a poster in Oslo →

- Realization:

*What I enjoyed doing at Spaceti was research work.*

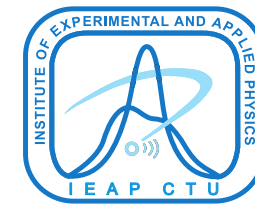
- **2015:** joined **IEAP** (based on a classmate's recommendation)
  - Learned about pixel detectors: Timepix, Timepix3, ...
  - Began working at LHC experiments at CERN: ATLAS, MoEDAL (LHCb)
- **2016:** 1 of my 2 bachelor projects was on physics experiments
- **2018:** both my master's projects were related to IEAP activities
  - CU: Timepix3 Compton camera with GPU-based 3D reconstruction
  - CTU: particle identification at ATLAS & MoEDAL with CV methods

Me installing →  
Timepix3 at ATLAS





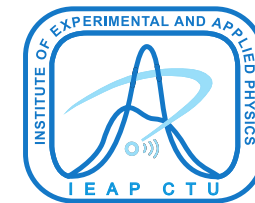
# Positive feedback!



- **2018:** project recognized as the IT Student Project of the Year
  - Master's project competition in Czechoslovakia, organized by ACM
  - 3 awards, including the main prize → reported in TV, newspapers



# Scaling up...

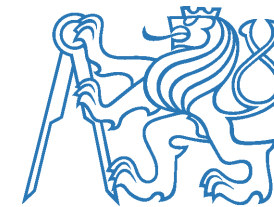
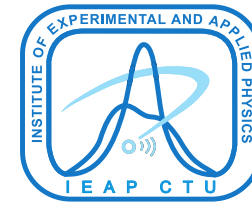


- **2018-2019:** gap year to try practical research work
- **2019:** started Ph.D. course at University College London
- **2020-2025:** doctoral study Computer Science + Physics
  - Collaboration between **UCL** and **IEAP CTU**.
  - 6-month industrial group project: machine learning in British nuclear fusion programme (with UK Atomic Energy Authority)
  - 6-month industrial placement: reinforcement learning for compiler tuning with Cray supercomputers (with HP Enterprise)
  - Participated in 3 summer schools, invited back as a tutor.
  - Integrated with professional organizations: IOP, IEEE, ACM
- **Today:** several days away from submitting my thesis!
- **Future:** IEAP post-doc, industry projects with pixel det.



Water Cherenkov detector  
under construction  
(Hoyt Lakes, MN)





Thank you for listening!

Petr Mánek, [petr.manek@utef.cvut.cz](mailto:petr.manek@utef.cvut.cz)