



James Black

Software Developer

PhD Candidate, Durham University

+44 747 329 2921
james.a.black@durham.ac.uk
https://jamesblack.ddns.net
https://github.com/JBlack93
https://gitlab.dur.scotgrid.ac.uk/black
https://linkedin.com/in/james-black93

Languages/Tools —

C++ ● ● ● ● ●
Bash ● ● ● ● ●
LaTeX ● ● ● ● ●
C ● ● ● ● ●
GNU binutils ● ● ● ● ●
Python ● ● ● ● ●
html ● ● ● ● ●

Soft Skills —

Problem Solving ● ● ● ● ●
Organisation ● ● ● ● ●
Public Speaking ● ● ● ● ●
Communication ● ● ● ● ●
Creativity ● ● ● ● ●
Leadership ● ● ● ● ●

Projects

REDonFDTD **Key Tools:** C++, C++17, CMake, Qt, Travis [View it on GitHub!](#)
C++ program which numerically propagates Electromagnetic fields produced by relativistic point charges; built using CMake, with a Qt GUI providing real-time visualisation with Gnuplot.

Education

Postgraduate Training

2016 – 2020 **PhD in Physics** Institute for Particle Physics Phenomenology, Durham
Development of High Energy Jets (HEJ) in C++, added subleading logarithms to improve theoretical predictions for the LHC, CERN.
2019 – 2020 **MCnetITN3 Short Term Studentship** University of Lund, Sweden
Utilise HEJ as developed above as a C++ library to add its predictions to that of another program developed in Lund.

Undergraduate Study

2011 – 2016 **Theoretical Physics, MPhys ($\emptyset 1,0$)** Durham University
One year spent on exchange at Queen's University, Ontario
Master Thesis (83) Supervisor: Dr. Jeppe Andersen
The Application of the Finite-Difference Time-Domain Method To Problems in Relativistic Electrodynamics
Summer 2015 **Summer Studentship** Edinburgh University
Validated and cleaned C++ code used to make predictions for the LHC.

Teaching Experience

2018 – now **Foundations of Physics 3A** Durham University
Third Year Quantum Mechanics, Nuclear and Particle Physics.
2017 – 2018 **Introduction to Programming** Durham University
Python 3: from absolute basics up to finishing a self-encompassing project, for example: a moon landing simulation.
2016 – 2017 **Presentation Skills** Durham University
Delivered a course on how to read your audience and avoiding common pitfalls when presenting work.

Outreach Work

2018 – 2019 **Event Manager** Pint of Science, Durham
Managed three scientific outreach events with nearly 100 attendees from conception to completion
2017 – 2019 **Web Developer** Pint of Science, Durham
Managed and developed web presence for events.
2017 – now **Presenter** Institute for Particle Physics Phenomenology
Integral member of *Modelling the Invisible* team.

Skill Development

2017 – 2018 **Middle Common Room President** University College, Durham University
Elected representative for a student body of over 500 for 2017-2018. Managed a small committee of ten dealing with H&S, social, welfare and financial issues which organised roughly five events per week, including a large scale ball with a budget of £20,000
2016 – 2017 **Middle Common Room Secretary** University College, Durham University
Responsible as a liason between the common room, the college and the central university. Also maintaining the common room website: www.castlemcr.co.uk