

# Alexander Punter

DOB: 20/05/1991 | ajpunter@gmail.com

## EDUCATION

### AIX-MARSEILLES UNIVERSITY

PHD IN CHEMICAL SCIENCES

Oct 2019 | Aix-Marseilles University, France

### DURHAM UNIVERSITY

MPHYS IN THEORETICAL PHYSICS

Aug 2013 | Durham, UK

### KING EDWARD'S SCHOOL

Aug 2009 | Bath, UK

## LINKS

Github:// cvzj57

LinkedIn:// alexander-punter

## ACADEMIC FOCUSES

### DOCTORAL

Quantum Chemistry

Computational Chemistry

Hartree-Fock Theory

Density Functional Theory

Computational Modelling

Numerical Methods

### UNDERGRADUATE

Quantum & Classical Physics

Condensed Matter Physics

Astrophysics

Theoretical Physics

Functional Programming

## SKILLS

### PROGRAMMING

Python • Shell • Django • Git •

Subversion • Latex • gnuplot • Javascript

• SQL • Docker • Selenium • Sikuli

### QUANTUM CHEMISTRY

### SOFTWARE

Turbomole • GAMESS • Molden

• VMD

### OTHER

French (approximately B2 level) • Full UK

Driving License

## INTERESTS

Playing music (violin) • Reading (fiction & non-fiction) • Language-learning (French & Mandarin) • Motorcycling

## RELEVANT EXPERIENCE

### AIX-MARSEILLES UNIVERSITY | DOCTORAL STUDENT

Sep 2016 – Nov 2019 | Marseilles, France

- PhD Title: 'Molecular Pseudopotentials for the study of Molecular Properties'
- Supervisors: Dr Yannick Carissan & Dr Paola Nava, CTOM group
- Developed a pseudopotential method for the replacement of small carbon fragments in molecular calculations.
- Analysed the performance of this method across a wide variety of molecules and properties.
- Wrote the MOO program to facilitate the easy use of these pseudopotentials, as well as the optimisation of new ones. This was done in Python and interfaced with the TURBOMOLE package.
- Also worked on establishing reaction mechanisms for Cobalt complexes.
- Conference Presentations: Annual Northern Universities Meeting on Chemical Physics 2019, Francophone Theoretical Chemists' Conference 2018
- Conference Posters: International Conference on Quantum Chemistry 2018, Winter School in Theoretical Chemistry 2018, CECAM DFT School 2017

### TURNITIN UK | QA ASSOCIATE

Jan 2016 – Jul 2016 | Newcastle, UK

- Tested various parts of the Turnitin software on multiple platforms (Blackboard, Moodle) both manually and through automated teste suites. This work was done primarily in Python (via Selenium) with some Java.
- Worked in an Agile development team.
- Tested both general functionality and compliance with W3C Accesibility guidelines.

### JOINERYSOFT | JUNIOR DEVELOPER

Oct 2013 – Dec 2015 | Shepton Mallet, UK

- Developed an automated test framework for the Joinerysoft package, as well as a web interface. This involved working extensively with Python, Django and Sikuli.
- Worked as a general developer on the JMS4 package. This involved work in Python, Django and Javascript.

### DURHAM UNIVERSITY | UNDERGRADUATE

Sep 2009 – Aug 2013 | Durham, UK

- Master's Project: 'The Modelling of Active Galaxies' A mathematical and computational project to derive a velocity law describing the mass outflow from Active Galactic Nuclei, with a simulated spectrographic datacube to compare with real data. This was done in Python and matplotlib.

## PUBLICATIONS

2019	Int. J. Quantum Chem.	Atomic pseudopotentials for reproducing $\pi$ -orbital electron behavior in $sp^2$ carbon atoms
2019	Dalton Transactions	When Cobalt-Mediated [2+2+2] Cycloaddition Reaction Dares Go Astray: Synthesis of Unprecedented Cobalt(III)-Complexes
Submitted for review	-	Pseudopotential-Fragment Spectroscopy for Organic Molecules and Carbon Allotropes

## VOLUNTEER WORK

Project VOICE	Finance & Technical Support 2016-current	Proofreader, typesetter, graphic designer, website maintenance, accounting.
St John Ambulance	Volunteer 2009-2016	Covered events around the country, both as a first aider and an ambulance attendant.
St John Ambulance	Unit Finance Officer 2011-2013	Managed finances for budgeting, equipment and training.
St John Ambulance	Heartstart Co-ordinator 2010-2011	Organised and ran charity and commercial first aid courses.