# Willi Carlsen

*Quantum optics, statistics and programming interested experimental physicist with data science/engineering, web development and growth hacking experience*

## Resume

My current work flow revolves around AWS, Docker, Python, web development, SQL, automation and monitorization, so this is where I really shine. I have a strong interest in programming, web development, cloud deployments, large amounts of data and automation and my job really let me take advantage of these interests.

## Experience

2018–present **Data engineer in Smart Data**, *DFDS*, Copenhagen.
Responsible for building and dockerizing web applications, deployments of these into AWS and Kubernetes and monitorization of all deployments. Introducing best practices from software development into the area of data science, reducing complexity, risks and future need for maintenance, by e.g. introducing code reviews, regular architecture/implementation discussions and having a fast and easy deployment cycle.

2016–2018 **Growth hacker, data scientist in Analytics**, *SimpleSite*, Copenhagen.
Producing automated processes from structuring and cleaning production data and third party data into a more analysis friendly format and creating and delivering vital analysis. Good knowledge of product code base and development projects related to data collection, tracking and setting up and evaluating A/B tests. Being the driving force in a big marketing analysis project, creating new data sources and more detailed analysis in order to become a more cutting edge and competitive digital marketing department.

2012–2014 **Laboratory instructor in courses Classical Mechanics 1 & 2**, *University of Copenhagen*, Copenhagen.
Development of new educational material and teaching the laboratory exercises and programming in Matlab (look under "Prizes").

2010–2015 **Handicap assistent for the head of IT in Dansk Handicap-Idræt**, *Frederiksberg Kommune*, Copenhagen.
Maintenance and development of the homepages `dhif.dk` and `racerunning.dk`. IT responsible at the World Cup in wheelchair rugby 2014 in Odense. IT and event responsible at yearly athletics cup at Frederiksberg. Other responsibilities include maintaining, updating, troubleshooting and developing athlete database.

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## Skills

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| Language | Danish and English. Fluent in both written and speach |
| Data processing | Python, R, SQL, Matlab, Mathematica, C++ (ROOT), Labview, Google Analytics |
| Web | HTML, CSS, Python/Flask, JavaScript/Angular, C#/.NET |
| Operating system | Mac OSX, GNU/Linux, Microsoft Windows |
| Miscellaneous | Git, AWS (S3, EC2, Lambda, IoT Greengrass, ELB, EB, RDS), Kubernetes, Docker, Jenkins, Office suite, Vim, Bash, *NIX command line, Markdown, LaTeX |

## Education

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| 2009–2015 | **MSc in Physics**, *Niels Bohr Institute*, University of Copenhagen, Average 9.3. |
| Project title | *Cryogenic cavity optomechanics with ultrahigh-Q membrane resonators* |
| Supervisors | Professor Eugene Polzik & Associate Professor Albert Schliesser |
| Description | An experiment trying, via optomechanical effects, to laser cool a nano-membrane to its ground state. The nano-membrane motion is caused by Brownian motion due to its finite temperature. It is exactly this vibrational noise we cooled away to glance at a macroscopic objects quantum behavior. The membrane was laser cooled from cryogenic temperature (4 K) down to 3 mK, yielding a 4% chance of observing the object in its ground state. |
| Selected courses | "Applied Statistics", "Introduction to Computing for Physicists", "Optical Physics & Lasers", "Experimental Physics", "Quantum Optics 1 & 2", "Mathematical Physics", "Condensed Matter Physics 1 & 2". |

## Various experience

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| 2009 | **Sea kayak instructor**, *Det Danske Spejder Korps*. |

## Prizes

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| 2013 | Niels Bohr Institute yearly teaching prize the Jens Martin Knudsen teaching prize for the performance done in laboratory courses in Classical Mechanics 1 & 2. Teaching the students physics, laboratory routines, statistics and programming. |

## About me

I am 30 years old and I use a lot of my spare time with my family and friends. The rest of the time is spend on fishing, computers, gaming, programming, Linux, Open-Source software, cloud computing, kayaking, sailing and much more.

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