

# Robert Andrew Spencer

## Curriculum Vitae

### PERSONAL DATA

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| DATE OF BIRTH  | 27 November 1994   |
| PLACE OF BIRTH | Cape Town — South Africa   |
| NATIONALITY:   | South Africa   |
| ADDRESS        | 14 Ridge Way<br>Pinelands<br>7405<br>Cape Town<br>South Africa             |
| TELEPHONE:     | +27 (0)76 021 8434<br>+44 (0)7919 312282                                   |
| EMAIL:         | <a href="mailto:robert.spencer94@gmail.com">robert.spencer94@gmail.com</a> |
| GITHUB:        | <a href="https://github.com/rspencer01">rspencer01</a>                     |



### EDUCATION

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|         |  |  |
|---------|--|--|
| Reading | MASt in Mathematics<br>from <b>University of Cambridge</b>   |  |
| 2016    | B.Sc. (Hons) (Mathematics)<br>from <b>University of Cape Town</b>  | <a href="#">— Detailed List of Marks</a>   |
| 2015    | B.Sc. (Mathematics, Applied Mathematics and Physics)<br>from <b>University of Cape Town</b> (3rd Year) <i>awarded with distinction in Applied Mathematics, Mathematics, Physics and the degree with distinction.</i> | <a href="#">— Detailed List of Marks</a>   |
| 2012    | Matriculation from <b>Westerford High School</b><br>Online Courses from <b>MITx and EdX</b>  | <a href="#">— Detailed List of Marks</a><br><a href="#">— Detailed List of Marks</a> |

### SCHOLARSHIPS

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|      |   |   |                                      |
|------|---|---|--------------------------------------|
| 2017 | Skye Foundataion Scholarship<br>Skye Cambridge Scholarship  | Skye Foundation<br>Cambridge Trust  | (£30 000)<br>(£8 000)                |
| 2016 | Innovation Scholarship<br>Roderick Noble Scholarship  | National Research Foundation<br>University of Cape Town                       | (R50 000)<br>(R5 000)                |
| 2015 | Vice Chancellor's Scholarship<br>Science Faculty Scholarship  | University of Cape Town<br>University of Cape Town                            | (R40 000)<br>(R15 000)               |
| 2014 | Vice Chancellor's Scholarship<br>Science Faculty Scholarship<br>Twamley December Scholarship                      | University of Cape Town<br>University of Cape Town<br>University of Cape Town | (R40 000)<br>(R15 000)<br>(R2 000)   |
| 2013 | Vice Chancellor's Scholarship<br>Computer Science Department Entrance Scholarship<br>Allan Gray Orbis Scholarship | University of Cape Town<br>University of Cape Town                            | (R40 000)<br>(R10 000)<br>(R100 000) |

## UNIVERSITY ACHIEVEMENTS

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|      |  |
|------|--|
| 2015 | Dean's Merit List<br>MAM3040W Class Medalist<br>PHY3021F Class Medalist<br>PHY3022S Class Medalist |
| 2014 | Dean's Merit List<br>PHY2014F Class Medalist   |
| 2013 | Dean's Merit List<br>PHY1004F Class Medalist<br>CSC1015F Top 3                                     |

## WORK EXPERIENCE — REFERENCES AVAILABLE ON REQUEST

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|----------------|---|
| 2017 — Present | <b>Firmware Contract</b><br>Avionic radio firmware<br>— Southwestern Electronics  |
| 2017           | <b>Software Development Intern</b><br>Android UI Systems ( <a href="#">Litho</a> )<br>— <a href="#">Facebook LTD</a>                                      |
| 2016           | <b>Undergraduate Mathematics Tutor</b><br>— <a href="#">University of Cape Town</a>   |
| 2015           | <b>Software Development Intern</b><br>— <a href="#">Amazon Web Services</a>   |
| 2014 — 2017    | <b>Contract Web Developer</b><br>Backend system design<br>Software development — front- and back-end<br>Database design<br>— <a href="#">Playwhoo.com</a> |
| 2013           | <b>Contract Software Developer</b><br>Metrological DBMS development<br>— <a href="#">InterMet South Africa</a>  |
| 2013           | <b>Contract Software Developer</b><br>System design and development<br>Database design<br>— Docubot Document Management Software                          |

## COMPUTER SKILLS

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|-------------------|---|
| LANGUAGES         | Python, C, C++ , SQL, HTML, css, bash, Delphi Pascal, Mathematica |
| OPERATING SYSTEMS | Ubuntu Linux , Microsoft Windows                                  |
| APPLICATIONS      | git, $\LaTeX$   |
| OTHER             | Algorithm design/analysis, system administration                  |

## LANGUAGES

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|            |               |
|------------|---------------|
| ENGLISH:   | Mother Tongue |
| AFRIKAANS: | Basic         |

## INTERESTS AND ACTIVITIES

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Recreational Programming; Piano; Archery; Terrain Simulation; Competitive Coding Training; Reading; Electronics; Hiking

## EXTRA-CURRICULAR ACHIEVEMENTS

### AND RESPONSIBILITIES — REFERENCES AVAILABLE ON REQUEST

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|-------------|--|
| 2016        | South African International Olympiad in Informatics Team Coach<br>South African International Olympiad in Informatics Team Leader<br>Base leader of Electronics Base, Cederberg Senior Scout Adventure   |
| 2015        | South African International Olympiad in Informatics Team Coach<br>South African International Olympiad in Informatics Deputy Team Leader   |
| 2014        | South African International Olympiad in Informatics Deputy Team Leader<br>South African International Olympiad in Informatics Team Coach<br>Base leader of Electronics Base, Cederberg Senior Scout Adventure<br>Modern Mathematics International Summer School for Students |
| 2013        | South African December Mathematics Training Camp Coach   |
| 2012        | Base staff of Electronics Base, Cederberg Senior Scout Adventure<br>Western Cape Education Department Public Speaking Trophy<br>Google Code-In   |
| 2009 — 2012 | Organising committee member, COMPUTERS ROBOTS AND ELECTRONIC DESIGNS Club  |
| 2011        | Publication in English Alive   |
| 2009        | Founder of Westerford COMPUTERS ROBOTS AND ELECTRONIC DESIGNS Club   |

## HIGH SCHOOL ACHIEVEMENTS

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|------|--|
| 2012 | Honikman Honour Award<br>Academic Honours<br>Prefect<br>Best One Act Play Script<br>Goldblatt Play Characterisation Award<br>Noel Taylor Public Speaking Trophy<br>Van Vlaanderen Trophy for Highest Marks in Physical Science and Mathematics<br>Grade Prize for Physical Science, Advanced Programme Mathematics, English, Geography<br>Service to COMPUTERS ROBOTICS AND ELECTRONIC DESIGNS Club (founder)<br>Mathematics Tutor Claremont High School |
| 2011 | Best One Act Play Director<br>Librarian  |

## OLYMPIADS

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|------|--|--|
| 2016 | ACM International Collegiate Programming Contest (Thailand)<br>Standard Bank IT Challenge<br>NSUCRYPTO International Students' Olympiad in Cryptography  | —<br>Winning Team Western Cape<br>Winning Student  |
| 2015 | ACM International Collegiate Programming Contest (Morocco)<br>Standard Bank IT Challenge   | —<br>Winning Team Nationally and Western Cape  |
| 2014 | International Mathematics Competition (Bulgaria)<br>Standard Bank IT Challenge   | Second Prize<br>Winning Team Western Cape  |
| 2013 | International Olympiad in Informatics (Australia)<br>International Mathematics Competition (Bulgaria)<br>South African Tertiary Mathematics Olympiad   | Bronze Medal<br>Honourable Mention<br>Winner (undergraduate section)   |
| 2012 | International Mathematics Olympiad (Argentina)<br>International Olympiad in Informatics (Italy)<br>South African Computer Olympiad<br>UCT Mathematics Competition<br>Mintec Science Olympiad<br>SAASTA Science Olympiad<br>Inter-Provincial Mathematics Olympiad | Honourable Mention<br>—<br>Winner<br>Winner<br>Western Cape Representative<br>1st in Western Cape<br>Western Cape A Team Captain (winners) |
| 2011 | International Mathematics Olympiad (Netherlands)<br>South African Computer Olympiad<br>Baltic Way Mathematics Competition (Germany)<br>UCT Mathematics Competition<br>Inter-Provincial Mathematics Olympiad<br>English Olympiad                                  | Honourable Mention<br>Bronze<br>—<br>Top 10<br>Western Cape A Team (winners)<br>Silver Award   |
| 2010 | UCT Mathematics Competition<br>South African Computer Olympiad<br>Inter-Provincial Mathematics Olympiad  | Top 10<br>Bronze<br>Western Cape A Team (winners)  |
| 2009 | South African Mathematics Olympiad<br>South African Computer Olympiad<br>UCT Mathematics Competition<br>Invitational World Youth Mathematics<br>Intercity Competition (South Africa)<br>Inter-Provincial Mathematics Olympiad                                    | Winner<br>Top 20<br>Top 10<br>—<br>Western Cape A Team (winners)   |
| 2008 | UCT Mathematics Competition<br>Inter-Provincial Mathematics Olympiad   | Winner<br>Western Cape A Team (winners)  |

## GRADES

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### Bachelor of Science (Mathematics Hons)

University of Cape Town

| MODULE NAME           | GRADE |
|-----------------------|-------|
| Topology              | 91    |
| Algebra               | 80    |
| Differential Geometry | 100   |
| Cryptography          | 93    |
| Graph Theory          | 81    |
| Homological Algebra   | 95    |
| String Theory         | 89    |
| Seminar               | 98    |
| Project Seminar       | 98    |
| Project               | 100   |
| AVERAGE               | 93    |

### Third Year Bachelor of Science

University of Cape Town

| COURSE CODE | COURSE NAME              | GRADE | GRADE POINTS |
|-------------|--------------------------|-------|--------------|
| MAM3000W    | Mathematics 3000         | 86    | 72           |
| MAM3040W    | Applied Mathematics 3040 | 88    | 72           |
| PHY3021F    | Advanced Physics A       | 88    | 36           |
| PHY3022F    | Advanced Physics B       | 80    | 36           |
| AVERAGE     |                          | 86    |              |

### Second Year Bachelor of Science

University of Cape Town

| COURSE CODE | COURSE NAME                        | GRADE | GRADE POINTS |
|-------------|------------------------------------|-------|--------------|
| MAM2000W    | Mathematics 2000                   | 94    | 48           |
| MAM2046W    | Applied Mathematics 2046           | 88    | 48           |
| PHY2014F    | Waves, Vibrations & Electromagnets | 88    | 24           |
| PHY2015F    | Classical & Quantum Mechanics      | 88    | 24           |
| CSC2001F    | Computer Science 2001              | 87    | 24           |
| AVERAGE     |                                    | 90    |              |

### First Year Bachelor of Science

University of Cape Town

| COURSE CODE | COURSE NAME                     | GRADE | GRADE POINTS |
|-------------|---------------------------------|-------|--------------|
| MAM1000W    | Mathematics 1000                | 90    | 36           |
| MAM1019H    | Fundamentals of Mathematics     | 97    | 18           |
| MAM1043H    | Modelling and Applied Computing | 87    | 18           |
| MAM1044H    | Dynamics                        | 100   | 18           |
| PHY1004W    | Matter and Interactions         | 96    | 36           |
| CSC1015F    | Computer Science 1015           | 96    | 18           |
| CSC1016F    | Computer Science 1016           | 91    | 18           |
| AVERAGE     |                                 | 94    |              |

## Online Courses

| INSTITUTION | COURSE CODE | COURSE NAME              | GRADE |
|-------------|-------------|--------------------------|-------|
| Berkley     | CS188.1x    | Artificial Intellegence  | 92    |
| MIT         | 6.002x      | Circuits and Electronics | 95    |

## Matriculation

Westerford High School

| SUBJECT  | GRADE |
|--|-------|
| English Home Language                                | 82    |
| Afrikaans First Additional Language                  | 81    |
| Mathematics  | 99    |
| Life Orientation                                     | 87    |
| Geography  | 85    |
| Music  | 84    |
| Physical Sciences                                    | 93    |
| Mathematics: Probability, Data Handling and Geometry | 90    |
| Advanced Program Mathematics (IEB)                   | 96    |
| AVERAGE  | 89    |