

# Pranjal Dhole (M.Sc.)



## Contact Information

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Homepage: <https://pranjalldhole.github.io/>  
GitHub: <https://github.com/pranjalldhole>

## Work Experience

**Doctoral Researcher** [05.2015 - 11.2016]  
Department of Behaviour and Brain Organization  
Research Center caesar, Bonn

**Research Intern** [09.2015 - 04.2016]  
Department of Behaviour and Brain Organization  
Research Center caesar, Bonn

**Student Assistant** [08.2014 - 09.2015]  
Bonn-Cologne Graduate School (BCGS) office, Bonn  
Main tasks: Organization of the intranet system, assistance in administrative tasks.

**Student Assistant** [11.2013 - 03.2014]  
University of Bonn, Bonn  
Task: Preparation of lecture notes for course 'Advanced atomic, molecular and optical physics' taught by Prof. Dr. Michael Köhl at University of Bonn during WS2013-14.

## Education

**Master in Autonomous Systems** [03.2016 - present]  
Hochschule Bonn-Rhein-Sieg, Sankt Augustin, Germany

**Master of Science in Physics** [10.2012 - 08.2015]  
University of Bonn, Germany  
CGPA: 1.8<sup>1</sup>

**Bachelor of Science in Physics, Mathematics and Chemistry (triple major)** [06.2009 - 05.2012]  
Christ University, Bangalore, India  
CGPA: 3.42<sup>2</sup>

**Higher Secondary School Certificate** [2007 - 2008]  
Maharashtra State board, India

<sup>1</sup>The CGPA is according to the German Grading system. Grading scheme: 1.0 - 1.5 = very good ■ 1.6 - 2.5 = good ■ 2.6 - 3.5 = satisfactory ■ 3.6 - 4.0 = sufficient ■ 4.1 - 5.0 = fail.

<sup>2</sup>Grading scheme: 4.0 = Outstanding(A) ■ 3.67 = Excellent(A-) ■ 3.33 = Very Good(B+) ■ 3.00 = Good(B) ■ 2.67 = Average(B-) ■ 2.33 = Satisfactory(C+) ■ 2.00 = Pass (C) ■ 1.00 = Pass(D).

## Projects and Theses

### Extended 3D model for pupil-tracking

Supervisor: Dr. David Greenberg

Research internship  
[09.2015 - 04.2016]

Project Description: My project at CAESAR consisted of extending the 3D model for pupil-tracking from circular pupil, as previously done in lab [Wallace et al., *Nature*, 2013], to elliptical pupil and implementation of the pupil-tracking algorithm in the eye-tracking software developed at the lab.

### Emergent Gravity and Cosmology: Thermodynamic perspective<sup>3</sup>

Supervisor: Prof. Dr. Claus Kiefer

M.Sc. Thesis  
[05.2014 - 05.2016]

## Courses

### M.Sc. Physics Modules

General Relativity and Cosmology 1 & 2 | Quantum Field Theory 1 | Advanced Quantum Mechanics  
| Advanced Laboratory Course | Seminar on Advanced General Relativity  
| X-ray and radio observations of dark matter and dark energy | Quasars and Microquasars  
| Physics of Particle detectors | Condensed Matter Physics | Photonic devices

### B.Sc. Mathematics Modules

Logics | Advanced Calculus | Differential equations | Vector analysis  
| Abstract Algebra | Fourier transforms | Real and complex analysis | Numerical methods

### Physics Modules

Classical Mechanics | Electrodynamics | Optics | Quantum Mechanics  
| Electronics and Instrumentation | Astrophysics | Nuclear Physics

### Chemistry Modules

Physical Chemistry | Inorganic Chemistry | Organic Chemistry  
| General Chemistry | Biochemistry

## Computer Skills

|                    |   |
|--------------------|---|
| Programming skills | Python, MatLab, ROS, C++.   |
| Web development    | HTML, CSS, jQuery, JavaScript.  |
| Algebra            | Mathematica.  |
| Media              | L <sup>A</sup> T <sub>E</sub> X, Microsoft Visual Basic, Adobe Illustrator. |
| Operating systems  | Linux (Ubuntu and its variants), Windows 7 (proficient).                    |

## Languages

|         |                                    |
|---------|------------------------------------|
| English | Fluent                             |
| German  | limited working proficiency (B1.1) |
| Marathi | Native language                    |
| Hindi   | Native language                    |

<sup>3</sup>The slides of my thesis defense are available at <http://www.thp.uni-koeln.de/gravitation/mitarbeiter/dhole.html>

## Talks and Invited Seminars

- Masters Colloquium: ‘Emergent Gravity and Cosmology: Thermodynamic Perspective’, University of Bonn, May 22, 2015.
- Invited Talk - ‘Emergent Gravity - Thermodynamic Perspective’, BCGS Weekend Seminar at the Physikzentrum, Bad Honnef, Germany, April 19, 2015.

## Awards, Grants and Prizes

- Scholarship €6,000 in total, Stiftung caesar, for period of 6 months starting Sept., 2015.
- 2nd place in Convergence – Inter-collegiate Mathematics fest 2011.
- 2nd place in Eureka – Intercollegiate Physics Festival 2011.
- 3rd place in Chemicus – Intercollegiate chemistry fest in crosswords (B. Sc. 5th Semester) 2011.
- 2nd place in Chemicus – Intercollegiate chemistry fest in 20 questions (B. Sc. 5th Semester) 2011.
- 2nd place in Intercollegiate Mathematics Quiz (B. Sc. 3rd semester) 2010.
- 1st place in Intercollegiate Mathematics Quiz at NMKRV (B. Sc. 3rd Semester) 2010.
- 2nd place in Intra-collegiate Mathematics Quiz (B. Sc. 2nd Semester) 2010.
- 1st place in Intra-collegiate Mathematics Mega Event (B. Sc. 2nd Semester) 2010.
- 3rd place in Inter-collegiate Science Quiz (B. Sc. 1st semester) 2009.

## Attended Conferences and Graduate Schools

- ESI Systems Neuroscience Conference (ESISync), at FIAS, Frankfurt, Germany, July 7-8, 2016.
- Heidelberg Neuronal Ensemble Conference (HeiNEC), at Heidelberg, Germany, Oct. 9-10, 2015.
- Conference on Extended theories of Gravity, at Nordic Institute for Theoretical Physics (NORDITA), Stockholm, Sweden, March 9–14, 2015.
- 569 WE-Heraeus-Seminar: ‘Quantum Cosmology’, at the Physikzentrum, Bad Honnef, Germany, July 28 – August 01, 2014.
- Graduate school ‘From Classical to Quantum GR: Applications to Cosmology’, held at University of Sussex, Brighton, UK, April 23-25, 2014.
- Participation in the hosting committee for Planck Conference - 2013, University of Bonn, Germany.
- Research Education Advancement Program (REAP)-2009, Nehru Planetarium, Bangalore, India.

## Academic References

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 Universität zu Köln  
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Prof. Dr. Pavel Kroupa  
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## Work Reference

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