# Ayush Jaiswal

**Contact Information**

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**Research Background**

**Algebraic Geometry**
More specifically, I am studying parabolic bundles on real algebraic curves and $d$-holomorphic bundles on Klein surfaces. I have described certain gauge theoretic quotients of certain space of connections for parabolic bundles on real algebraic curve as embedded in real points of moduli of parabolic bundles on compact Riemann surface along with criteria for existence of $d$-holomorphic connection for $d$-holomorphic bundle on Klein surface. Presently, I am studying some algebro geometric properties associated to some moduli spaces.

**Education**

2023(ongoing)

**Indian institute of science education and research, Tirupati(IISER T)**, India

- Postdoc in Department of Mathematics

2017–2023

**Indian Institute of Technology, Gandhinagar(IITGn)**, India

- Ph.D. in Discipline of Mathematics, CPI: **7.94** – via 44 credits.
  - Thesis: *On d-holomorphic connections and gauge theoretic aspects of parabolic bundles over Klein surface*
- Advisor: Prof. Sanjaykumar Amrutiya.
- Ph.D. Degree: 29 July 2023

2013–2015

**Indian Institute of Technology, Kanpur(IITK)**, India.

- M.Sc., Mathematics. CPI: **7.2** – via 80 credits

**Technical Skills**

- *Programming Languages*: C, Python
- *Technical Softwares*: MATLAB, Git-hub, Latex

**Research Interests**

Algebraic Geometry

- Parabolic bundles
- $d$-holomorphic bundles

**Selected Publications/Preprints**

- ✍ Sanjay Amrutiya, Ayush Jaiswal, "*On d-holomorphic connections*", Proceedings-Mathematical Sciences 133, no. 2 (2023): 21.

- ✍ Sanjay Amrutiya, Ayush Jaiswal, "*A gauge theoretic aspects of parabolic bundles over Klein surfaces*", arXiv preprint arXiv : 2202:06210; 2022 (to be appear in Rocky mountain journal of mathematics)

**Professional Achievements/Awards/Scholarships**

| | |
|---|---|
| 2010–2011 | Secured 2nd position(merit based) in during B.Sc.(IInd year) |
| 2013 | *Joint Admission Test for Masters(JAM)* organised by *Indian Institute of Technology, Delhi(IITD)* |
| 2015 | *Graduate Aptitude Test for Engineering(GATE)* organised by *Indian Institute of Technology, Kanpur(IITK)* |

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| | 2016 | *Graduate Aptitude Test for Engineering(GATE)* organised by *Indian Institute of Science, Bangalore(IISC)* |
| | 2015,2016 | *Junior Research Fellow(JRF)* organised by *Council of Scientific and Industrial Research(CSIR)* |
| **Workshops/ Conferences attended** | 10 Feb – 14 Feb, 2020 | *Moduli of bundles and related structures* <br> ICTS, Bangalore, India. |
| | 4 Mar – 15 Mar, 2019 | Workshop <br> *Characteristic classes and cobordism* <br> IIT Bombay, Powai, Maharashtra, India. |
| | 24 June–13 July 2019 | AIS(Advanced Instructional School) <br> *Linear Algebraic Groups* <br> IIT Bombay, Powai, Maharashtra, India. |
| | 2 January – 2 May, 2021 | AIC(Advanced Instructioncal Course) <br> *Commutative Algebra* <br> online mode. |
| | 25 June – 14 July, 2018 | AIS(Advanced Instructional School) <br> *Basic Algebraic Geometry* <br> IISER Pune, Pune, Maharashtra, India. |
| **Delivered Talks/Poster Presentations** | 12 Dec – 16 Dec, 2022 | On *d*-holomorphic connections (Talk) <br> *Conference on Algebraic Geometry* <br> Harish Chandra Research Institute, Prayagraj, India. |
| | 6 Feb – 11 Feb, 2023 | On *d*-holomorphic connections (Poster) <br> *Vector bundles in Chennai* <br> Department of mathematics, IIT Madras, Chennai, India. |
| | 14 March, 2023 | Orientability and Poincare duality theorem (Poster) <br> *Occassion of Pi-Day* <br> Department of mathematics, IIT Gandhinagar, Gujarat, India. |
| | 16 Aug – 18 Aug, 2023 | On *d*-holomorphic connections (Talk) <br> *Discussion meeting on algebra and geometry* <br> Department of mathematics, IISER Bhopal, Madhya Pradesh, India. |
| **Teaching Experience** | Autumn 2017 – 2018 | Teaching Fellow <br> MA 101, Mathematics I(Real Analysis and Several Variable Calculus) at IIT Gandhinagar, Gujarat, India |
| | Spring 2018 – 2019 | Graduate Teaching Fellow <br> MA 102, Mathematics II(Linear Algebra and Differential Equations) at IIT Gandhinagar, Gujarat, India |
| | Autumn 2019 – 2020 | Graduate Teaching Fellow <br> MA 504, Linear Algebra at IIT Gandhinagar, Gujarat, India |
| | Spring 2019 – 2020 | Graduate Teaching Fellow <br> MA 102, Mathematics II(Several Variable Calculus and Complex Analysis) at IIT Gandhinagar, Gujarat, India |
| | Spring 2022–2023 | Teaching assitant <br> MTH 121, Linear algebra and applications at IISER Tirupati, Tirupati, Andhra Pradesh, India |
| | Summer 2022–2023 | Instructor <br> MTH 122, Linear algebra and applications at IISER Tirupati, Tirupati, Andhra Pradesh, India |
| | Summer 2022–2023 | Instructor <br> MTH 211, Multivariable Calculus at IISER Tirupati, Tirupati, Andhra Pradesh, India |
| | Autumn 2023–2024 | Teaching assitant <br> MTH 211, Probability theory and statistics at IISER Tirupati, Tirupati, Andhra Pradesh, India |