STATEMENT OF CONTRIBUTION: EDUCATION

ANAND DEOPURKAR

Teaching practice and performance. My **extensive and diverse teaching experience** consists of teaching **over 20 courses, ranging in size from 2 to 200, and in level from pre-calculus to current research**. For these, I have developed syllabi, teaching materials, and assessment items, in addition to lecturing.

My passion for teaching is attested by student feedback such as *"Anand's enthusiasm is infectious even at an unsightly hour of 9 am!"* Students have described me as *"exceptional"*, *"phenomenal"*, and *"definitely one of the best professors"*.

Along with clear exposition and lots of real-world application, I **use innovative methods**. This includes technology, real-world data, and other topic specific media, such as videos of rollercoaster rides to explain curvature and torsion, graphs of presidential ratings to teach about average values, vector field applets for differential equations, and animations of curves and surfaces in algebraic geometry.

The impact of my teaching is evidenced by **excellent student evaluations**. The students in my algebraic geometry course said in the SELT survey that it was a *valuable learning experience* (4.9/5) and *developed their ability to think* (4.6/5). At the University of Georgia, more than 70% students thought I was a *superior or outstanding teacher*. At Columbia, I always had over 4.5/5 (median) in student feedback for my effectiveness, and I was awarded the **Award for excellence in teaching**.

Research-led education. I have a strong record of engagement and impact in research-based education. I have supervised **2 masters students** (1 joint) and **2 honours students** (joint), with 3 more upcoming, and several short-term undergraduate research projects, including summer research projects and future research talent projects (special projects for top students in Indian universities to visit ANU). I am a mentor to 3 PhB students.

I have **taught ASC-level courses (Special Topics Courses)** almost every semester, despite being exempt from teaching due to the DECRA. Their impact is evidenced by the number of students who have continued to research or research-based coursework. Two of the three students in my first course chose me as their masters supervisor. A student in my algebraic geometry course will begin an honours project with me. An honours students I co-supervised, Kyle Broder, is now a PhD student at ANU and BCMR (China). A summer student I co-supervised, Sean Carroll, has finished a draft of a publishable paper improving the results published in *Journal of Algebra*, and has secured a PhD position in Northeastern University.

Course and curriculum design. My portfolio contains many successful examples of **team teaching, course coordination, and administration**. At Columbia, I coordinated, administered, and taught large courses (150-200 students), which included managing a team of tutors.

My portfolio contains successful examples of **curriculum development**. At Columbia, I reviewed and updated the curriculum for *Analysis and Optimization*, a large course in applied mathematics. Based on peer and student feedback, I re-designed and updated the syllabus. In end-of-term survey, 77% of the students deemed the course "Very good" or "Excellent" and 83% said they would recommend it to others. At the ANU, I designed and taught a new course on algebraic geometry, drawing on my past experience of teaching similar courses. It had a much higher enrolment than usual (37 vs average of 15 for the last 9 semesters), got a score of 4.9/5 as a *valuable learning experience*, and led to a request (from about 10 students) for a follow up course, which I am developing and teaching this semester.

Student focused teaching. I give a clear outline of the course objectives and materials, and develop supplementary reference material tailored to the backgrounds of my students. I use innovative methods to **give timely and valuable feedback**. Most recently, I used `Gradescope`, a cloud-based marking software for consistent marking and feedback. Its impact was evident from the student feedback, which said *"thank you for the brilliant and comprehensive feedback... We wish all lecturers put similar effort..."*

Being committed to open learning, I **make my materials publicly available**. These materials have made positive impact more broadly than the ANU. Data from Google Search Console shows that in the last year, my teaching materials received over 500 clicks from all over the world. An MIT post-doc I met at a conference, Dori Bejleri, told me that he found my course material for Riemann Surfaces exemplary.

Teaching and learning development and scholarship. I keep detailed records of my teaching experience and strive to use them to improve my teaching. I keep myself updated by reading teaching related blogs such as the *AMS Education Blog*, and I incorporate these practices in my own teaching. Through continuous reflection and improvement, I strive to make my teaching as rewarding for the students as it is for me.