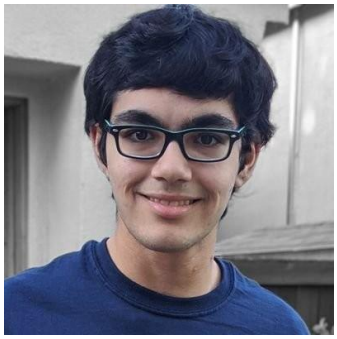

Tanishq M. Abraham

2nd Year PhD Student Biomedical Engineering
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https://www.linkedin.com/in/tanishq-abraham-iscienceluvr/

About Tanishq

Tanishq Abraham is recognized as a child genius and a prodigy. He graduated high school at 10 years old with a 4.0 GPA and at 11 he obtained 3 college Associate Degrees also with a perfect 4.0 GPA. When he was 14, he finished his biomedical engineering program. He graduated from University of California, Davis with summa cum *laude* becoming the youngest biomedical engineer. As an undergrad, he has presented papers at several conferences. At 14, he was the first author on a review paper about smart bio-inspired vesicles and its biomedical engineering applications published in IOP Physical Biology.

Tanishq joined the biomedical engineering PhD program at 15. By 16, he became a published book chapter author in the book "Artificial Intelligence and Deep Learning in Pathology". Now at 17, he is a 2nd year PhD student in biomedical engineering at UC Davis. He has worked for a year in the Levenson lab at UC Davis on applying deep learning to novel microscopy techniques in order to enable digital pathology applications. His recent conference was presenting his PhD research at the ICML2020 Computational Biology workshop. Tanishq has also reviewed few books that includes two science fiction books and recently a machine learning book.

Tanishq is self-motivated, curious about the mechanics of things, a passionate learner, goal setter (and achieving those goals), a hard-worker and an over-achiever. He enjoys all things science, technology, politics, movies and sports. Loves to interact and talk with people. Tanishq has appeared on many international and national TV, radio and print news, TV and radio talk shows, realty TV shows and documentary shows. He is a role model for young and old students.

Education

High School

Diploma (2014) – 4.0 GPA

Degrees

AS - General Science (May 2015) - 4.0 GPA

AS - Math & Physical Sciences (May 2015) - 4.0 GPA

AA - Language Studies (May 2015) - 4.0 GPA

BS - Biomedical Engineering (June 2018) - 3.94 GPA *(summa cum laude)*

PhD - Biomedical Engineering (Sept 2018- curent)

Technical Skills

1. Programming languages/libraries/software – Python, C, MATLAB, HTML, CAD (Solidworks), ImageJ, GIMP, PyTorch, fastai, NumPy, SciPy, Scikit-Learn, OpenCV, Jupyter Notebooks, LaTeX
2. Programming skills – Deep Learning (CNNs, GANs, Transformers, GCNs, etc.), Machine Learning (Decision Trees, Random Forests, XGBoost, SVMs, Regression, etc.), Computer Vision (Classification, segmentation, etc.)
3. Lab skills – PCR, Gel Electrophoresis, Bacterial Transformation, Cell-free systems, Artificial Cell synthesis, Microscopy, Fluorescence Microscopy, Mathematical modeling

Research Presented

1. Oral Presentation – "Whole-Body Mathematical Models of Synthetic Biosensing Liposomes" - West Coast Biological Sciences Undergraduate Research Conference, Santa Clara University, April 2017 (Awarded Honorable Mention Award for Oral talk)
2. Oral Presentation – "Whole-Body Mathematical Models of Synthetic Biosensing Liposomes" UC Davis Undergraduate Research Conference, April 2017
3. Poster Presentation – "Whole-Body Mathematical Models of Synthetic Biosensing Liposomes" - UC Systemwide Bioengineering Symposium, UCLA, June 2017 (Awarded UC Systemwide Undergraduate Diversity Travel Award)
4. Oral Presentation – "Whole-Body Mathematical Models of Synthetic Biosensing Liposomes: An Application for the Prevention of Metastasis" - Biomedical Engineering Society Annual Meeting, Phoenix, AZ, October 2017
5. Oral Presentation – "CardioVision: Non-Contact Heart Monitoring of Burn Patients" – UC Davis Biomedical Engineering Senior Design Symposium (Awarded "Best Clinical Impact" Award for Oral Presentation), June 2018
6. Oral Presentation – "CardioVision: Non-Contact Heart Monitoring of Burn Patients" presented at UC Davis Pathology Grand Rounds, June 2018
7. Oral Presentation – "CardioVision: Non-Contact Heart Monitoring of Burn Patients" - UC Systemwide Bioengineering Symposium, UC Riverside, June 2018

8. Poster Presentation – “Whole-Body Computational Design of Biomimetic Cells that Inhibit Circulating Tumor Cells” - Biomedical Engineering Society Annual Meeting, Phoenix, AZ, October 2018
9. Oral Presentation (Rapid-Fire) – “Slide-Free MUSE Microscopy to H&E Histology Modality Conversion with Deep Learning”- 2020 UC Davis Biomedical Engineering Graduate Group Symposium
10. Poster Presentation – “Slide-free MUSE Microscopy to H&E Histology Modality Conversion via Unpaired Image-to-Image Translation GAN Models” at the ICML2020 Computational Biology Workshop
11. YouTube Talk – “What are CycleGANs? (a novel deep learning tool in pathology)” – Abhishek Thakur’s YouTube channel (30K subscribers)
12. Poster Presentation – “Slide-Free MUSE Microscopy to H&E Histology Modality Conversion with Deep Learning” - Biomedical Engineering Society Annual Meeting, October 2020

Published works

1. *"Engineering approaches of smart, bio-inspired vesicles for biomedical applications"* by Tanishq Abraham, Michelle Mao, Cheemeng Tan, Physical Biology –IOP Journal *(published online July 2018, November 2018 issue)*
2. *“Applications of artificial intelligence for image enhancement in pathology”* by Tanishq Abraham, Austin Todd, Daniel A. Orringer and Richard Levenson, “Artificial Intelligence and Deep Learning in Pathology” – Book published by Elsevier *(released June 2020)*
3. *“Slide-free MUSE Microscopy to H&E Histology Modality Conversion via Unpaired Image-to-Image Translation GAN Models”* by Tanishq Abraham, Andrew Shaw, Daniel O’Connor, Austin Todd, Richard Levenson – 2020 ICML Computational Biology Workshop

Mentoring

1. UC Davis BIM 1 (“Introduction to Biomedical Engineering”) Teaching Assistant (leading two 3 hour discussion sections) – mentored 11 teams with ~50 students (September 2019-December 2019)
2. UC Davis Computer Science Senior Design Team 2020 – mentored and guided CS students working on a project from the Levenson Lab (January 2020-June 2020)
3. UC Davis BIM 1 (“Introduction to Biomedical Engineering”) Teaching Assistant (leading two 3 hour discussion sections) – mentoring ~60 students (September 2020-December 2020)

Curricular Honors and Awards

1. 2015 Phi Theta Kappa All-California Academic Team Award by Community College League
2. 2016 UC Santa Cruz Regent Scholar Awardee
3. 2016 UC Davis Cal Aggie Alumni Scholarship
4. 2016-2018 UC Davis Honors Scholar
5. 2016-2017 UC Davis Undergrad Scholarship
6. 2016-2017 Schilling Robotic Appreciation Scholarship
7. 2017-2018 Schilling Robotic Appreciation Scholarship

8. Dean's List – Fall 2016 (GPA-4.0) - College of Agriculture & Environmental Sciences, UCD
9. Dean's List – Winter 2017 (GPA -4.0) - College of Engineering, UCD
10. Dean's List – Spring 2017 (GPA-3.98) - College of Engineering, UCD
11. UCD Undergrad Travel Award - Spring 2017
12. 2017-2018 UC Davis Undergraduate Scholarship
13. Dean's List – Fall 2017 (GPA-3.98) - College of Engineering, UCD
14. Dean's List – Winter 2018 (GPA-3.93) - College of Engineering, UCD
15. Dean's List – Spring 2018 (GPA-3.94) - College of Engineering, UCD
16. 2018 UC Davis Dean's Distinguished Graduate Fellowship

Honors and Awards

17. ARC Student Senate Resolution- resolution in recognition of inspiring other college students- American River College, Sacramento, CA (8 yrs. old)
18. NASA Special Mention Award Certificate – Poster presentation & oral talk – category high school & undergrad students –Lunar Science Forum, NASA Ames (8 yrs. old)
19. California State Senate Resolution – resolution for contributions to society & young achievements by a 10 year old, from Senator Darrell Steinberg, Sacramento, CA
20. White House US Presidential Congratulatory letter from Pres. Barack Obama – for being a young high school graduate at 10 years old
21. White House US Presidential Congratulatory letter from Pres. Barack Obama – for being a young college graduate at 11 years old
22. 2018 *Vincitore Assoluto* (Absolute Winner) award from Premio Internazionale Giuseppe Sciacca Foundation, Vatican

Membership in Honor Societies and Clubs

1. American Mensa (2007-current)
2. Davidson Young Scholar (2009 -current)
3. Phi Theta Kappa -International Honor Society for 2-year colleges (2012-2015)
4. Astronomy & Physics Club, American River College, Sacramento, CA (2012 to 2013) - Founding Vice President
5. Astronomy & Physics Club, American River College, Sacramento, CA (2013 to 2014) - Vice President (Re-elected)
6. Phi Theta Kappa, American River College, Sacramento, CA (2014 to 2015) - Vice President of Communications (Re-elected)
7. Biomedical Engineering Society (2016- current)
8. Synthetic Biology Club, UC Davis (2016-2017) - Public Relations officer
9. Tau Beta Pi – National Engineering Honor Society (2018)
10. Phi Kappa Phi – National Higher Education Honor Society (2018)
11. Phi Beta Kappa – National Arts and Science Honor Society (2018)
12. UC Davis Biomedical Engineering Student Association (2018-current)

National & International Talks delivered

1. Poster presentation & oral talk – Lunar Science Forum, NASA Ames, CA (8 yrs. old)
2. Special Guest Speaker, Earth Day 2012- Department of Toxic Substance Control, Sacramento, CA (8 yrs. old)
3. Invited Speaker/panelist for SXSW 2013 Interactive Conference, Austin, TX (9 yrs. old)
4. Invited Speaker for inaugural video - 10th World Skoll Forum, Oxford, UK (9 yrs. old)
5. Special Guest Speaker, Earth Day 2013 - Department of Toxic Substance Control, Sacramento, CA (9 yrs. old)
6. TEDx Speaker, TEDxSacramento, CA (9 yrs. old)
7. Invited Speaker at 2014 '7 Days of Genius', 92Y organization, NYC, NY (10 yrs. old)
8. Invited Speaker at International Children's Book Festival, Sharjah, UAE (12 yrs. old)
9. TEDx Speaker , TEDxYouth, Folsom, CA (13 yrs. old)
10. Invited Speaker – Guest Lecture Series, VJTI Technovanza 2019, Mumbai, India (16 yrs. old)
11. Invited Speaker – Deepalaya High School Special Event, Delhi, India (16 yrs. old)

Extracurricular Activities

1. Chorister - San Francisco Boys Chorus- performed at 8 concerts, National Anthem for San Francisco Giants & Oakland As - Sept 2011 to June 2014
2. Photography – architecture, nature, astronomy
3. TV guest, host and contestant (2012 to present) – The Doctors Show, The Queen Latifah Show, The Conan Show, CNN, MSNBC, Huffington Post Live, The Child Genius, etc.
4. University Chorus, UC Davis – Winter 2018