

KC Santosh, PhD

Chair, Department of Computer Science, College of Arts & Sciences, University of South Dakota
Founder and Director, Applied AI Research Lab (ESTD. 2015)

Professional introduction. I am the [Chair](#) of the Department of Computer Science at the [University of South Dakota](#). I also serve [International Medical University](#), Malaysia as an Adjunct [Professor \(Full\)](#). For a year (AY 2019/20), I served School of Computing and IT, [Taylor's University](#) as a Visiting [Associate Professor](#). Prior to that, I worked as a [research fellow](#) at the U.S. National Library of Medicine ([NLM](#)), National Institutes of Health ([NIH](#)). I worked as a [postdoctoral](#) research scientist at the [LORIA](#) research center, Université de Lorraine in direct collaboration with industrial partner ITESOFT, France. I also served as a [research scientist](#) at the [INRIA](#) Nancy Grand Est research center (France), where I received [PhD in Computer Science – Artificial Intelligence](#). Before that, I worked as a [graduate research scholar](#) at SIIT, [Thammasat University](#), Thailand.

To name a few, I am the proud recipient of the [Cutler Award](#) for Teaching and Research Excellence ([USD, 2021](#)), the [President's Research Excellence Award](#) ([USD, 2019](#)) and the Ignite Award from the U.S. Department of Health & Human Services ([HHS, 2014](#)). I completed [leadership and training](#) program for Deans/Chairs (organized by the Councils of Colleges of Arts & Sciences (U.S., 21)) and PELI – President's Executive Leadership Institute ([USD, 21](#)). I am highly motivated/interested in academic leadership(s).

Teaching, curriculum (plus trans-disciplinary), and advising/supervision. I have taught more than [12](#) different courses such as [AI](#), [Computer Vision](#), [Machine Learning](#), [Information Retrieval](#), [Business Data Analytics](#) Fundamentals, [Robotics](#), [Unix](#), [Machine Organization](#), and [AI in medical imaging informatics](#). Every year, I receive nominations for the prestigious USD's teaching excellence award (Belbas-Larson). Since 2015, 95% of my teaching scores are above 4.5 (IDEA eval, in the scale of 5). I revised USD's [Computer Science MS – catalog](#) (2018) and introduced [AI programs](#) (2020): specialization and certificate (undergraduate and graduate). I added more than 10 new multi-disciplinary courses at USD. With these, I helped build the following programs across the USD campus: [Geospatial Graduate Certificate](#) ([Biology and Sustainability](#)), [Large Data Analytics Graduate Certificate](#) ([Physics](#)), and [Business Analytics Program](#) (MBA, [School of Business](#)), to name a few. Further, I introduced [Bioinformatics Graduate Certificate](#) (with [Biology](#) and [Biomedical Engineering](#) Departments). Not limiting there, considering market trends in AI/Data Science, I also introduced [Data Science Undergraduate Certificate](#) (aimed for non-Computer Science majors). I'm heavily involved with other two interesting academic and research programs: [PhD in Data Science & Engineering](#) (joint program with SDSMT, start date: Fall 23) and [Biomedical Computational Excellence Fellowship Program](#) (with School of Medicine, USD – under review).

As of now (Jan 2023), I co-supervised [two](#) and examined [15 PhD dissertations](#), and supervised [36 MS](#), [five Honors](#) theses and [three Fulbright](#) scholars. The other [five](#) received the prestigious [undergraduate research excellence awards](#) from the Office of Research & Sponsored Programs – USD.

Research. With \$2M+ funding (sources: SDCRGP, State of SD, DOE, NSF, and AOARD) and authored more than [220 peer-reviewed](#) research articles, [nine books](#), edited 12 journal issues, and eight conference proceedings, I have demonstrated my expertise in [artificial intelligence](#), [machine learning](#), computer vision, data mining, and big data with various applications such as [healthcare informatics speech/audio analysis](#), and Internet of Things. Being a proud [ACM distinguished speaker](#), I delivered more than [65 plenary/keynote](#) talks at the conference/university events (such as [Queen's University](#), Canada (2022), and IEEE Computer Society Chapter – Silicon Valley (2022)). Since 2018, being a [Senior Member, IEEE](#), I have been the chair of the IEEE Computer Society (region 4). My research lab ([2AI: Applied Artificial Intelligence](#), founded in 2015 with five students) is now composed of 30 students (Fall 2022). In addition to three Fulbright scholars, 20% of them are award winning research scholars (state, national, and international) from such as NSF-REU, NASA, NSF-NRT, NSF-GRFP, conference (best paper), 3MT thesis award, and USD's Office of Research and Sponsored Programs. In terms of research production, my lab produces 10-15 research articles per year and is considered the number 1 research lab in the USD campus. I am cited as the [world's top 2%](#) research scientists (source: Stanford University research report, 2021 - present) and am the [no. 1 research scientist](#) in the state of SD that is solely based on the bibliometrics

research report on artificial intelligence research (CS faculty). At USD, I'm ranked number 2 (last 6 years citations, source: scientific index 2023).

In today's world, [curriculum transformation](#) with [research component\(s\)](#) is a dealbreaker in academia. Two of my recent research [books](#): *AI, ethical issues, and explainability* (Springer, ISBN. 978-981-19-3934-1, 2022) and *Deep learning for medical imaging* (Elsevier, eISBN. 978-012-82-3650-5) adopted as [textbooks at USD's curricula](#): CSC 472/572 – AI & ethical issues and CSC 787 – AI in medical imaging informatics, respectively. Another book titled "*Medical imaging: artificial intelligence, ..., and machine learning technique* (ISBN. 978-036-71-3961-2)," who received the Choice Outstanding Academic Title from Taylors & Francis, is a reference book for CSC 787.

Service. I serve [ABET accreditation](#) as a [program evaluator](#) for computing programs. At USD, I manage 2022–23 [ABET accreditation renewal](#) site-visit successful. To name a few, I serve USD in the following capacities: [examiner/reviewer](#) of President's Research Excellence Award; member of [Institutional as well as Departmental \(Math\) Promotion & Tenure \(P&T\) Committee](#); [chair](#) of Sciences and Math Division; [vice-chair](#) of CURCS (Undergraduate University-wide research grants); and [member](#) of Faculty Affairs Committee, Graduate Council, Intellectual Property, Information Technology Advisory Council, Honors Program, College Curriculum & Instruction Committee, and Enrollment & Management Committee. In 2022-23 academic year, as the Chair of the Department, I have made a substantial improvement in [graduate enrollment: ~200](#) as compared to [10-15 students](#) per year on an average ([~4-decade record](#)). In undergraduate program, in Fall 22, it showed 39.2% growth.

I serve as an [Academic Editor](#) for PeerJ Computer Science; an [Associate Editor-in-Chief](#) of Electronics (Computer and Eng. Section); an [Associate Editor](#) for multiple journals such as [IEEE Transactions on Artificial Intelligence](#), International Journal of Machine Learning & Cybernetics (Springer), IEEE Access, IET Image processing, and Advances in Computational Intelligence (Springer); and a [Guest Editor](#) of multiple journals such as Journal of Biomedical Health Informatics (IEEE) and Journal of Speech Technology (Springer). In AI, I [chaired](#) more than [10 international conference events](#) (e.g., Computer Based Medical Systems, IEEE premier conference, since 2020) and Recent Trends in Image Processing & Pattern Recognition (since 2016)), and I [founded/organized four](#) international conferences in artificial intelligence, data science, and computer vision. The [USD's AI symposium \(500+ participants\)](#) is another event, which I consider a primary recruiting tool. I am the regular review panelist for research grants such as [NSF](#) (+ NSF-NRT, NSF-GRFP, NSF-SBIR/STTR), [Swiss NSF](#), [Medical Research Council \(UK\)](#), [Mitacs \(Canada\)](#), [NSERC \(Canada\)](#), [Fonds de recherche du Québec \(Canada\)](#), [University of Michigan – Precision Health](#), [ZonMW](#) (health research and innovation, [Netherlands](#)), [Medical Research Future Fund - Frontier Health and Medical Research Initiative \(AUS\)](#), and [Wallenberg AI, Autonomous Systems and Software Program - Humanities and Society \(Sweden\)](#). I also regularly review tier-1 journals such as The Lancet, Scientific Reports, Nature Communications, IEEE Trans. on Medical Imaging, IEEE Trans. on Image Processing, IEEE Trans. on Computational Social Systems, Pattern Recognition, and Machine Learning Research.

Diversity, inclusiveness, and leadership statement. I [respect and appreciate](#) the differences in ethnicity, gender, age, national origin, disability, sexual orientation, education, and religion. I am focused on the needs of every individual and ensured the right conditions for each person to achieve his or her full potential. To support the issues, I have more than [a decade of successful professional experience](#) in three different continents: Asia, Europe, and North America. For a reference, I speak six different languages, and as of now, I traveled 25 different countries.

I consider myself [AI/data scientist](#), [academic leader](#), curriculum and [program assessment expert](#), academic motivator, [award winning faculty](#), and author/editor. Precisely, my experience help develop and lead independent research programs/awards, participate in the creation, development, and delivery of novel curricula, and establish a record of successful undergraduate and graduate academic and professional leadership. I believe, based on my experiences, I would be able to demonstrate administrative leadership as well as the ability to recruit, mentor and retain diverse research-intensive faculty, maintain a collegial and ethical environment, and work with faculty and students of diverse backgrounds.

More information: Web: <https://kc-santosh.org/>