

Sravya Kondrakunta

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Areas of specialization

Research Interests Computer Science, Artificial Intelligence, Autonomous Agents, Goal Reasoning, Goal operations, Advanced Autonomy, Automated Planning and Acting, Cognitive Architectures, Machine Learning, Execution Monitoring, Metacognition, Explainable AI, Deep learning

Education

- Aug 2017 – **Wright State University, Dayton, Ohio,**
Dec 2021 Computer Science and Engineering, Ph.D., CGPA–3.70/4.0.
- Aug 2015 – **Wright State University, Dayton, Ohio,**
July 2017 Computer Science and Engineering, Masters, CGPA–3.66/4.0.
- Aug 2011 – **K L University, Guntur, Andhra Pradesh, India,**
May 2015 Electronics and Communication Engineering, Bachelors(Honors), CGPA–9.1/10.0.

Consolidated Work Experience

- Aug 2022 – **Tenure Track Assistant Professor, TEACHING AND RESEARCH, ST.OLAF COLLEGE.**
present*
 - Teaching and designing course work for undergraduate students.
 - Maintain active research in the field of artificial intelligence.
 - Service to the college by serving in various committees
 - Service to the research community through peer reviews, publications, organizing events such as workshops and conferences.
- Feb 2022 – **Visiting Assistant Professor, TEACHING AND RESEARCH, ST.OLAF COLLEGE.**
Aug 2022
 - Teaching undergraduate students.
 - Designing course work.
 - Research in goal reasoning and AI.
 - Service to the college and my research field.
- Jan 2019 – **Meta Decision Dynamics in Underwater Autonomous Vehicles, GRA, COLAB²-WSU.**
Dec 2021 Demo Link: <http://www.airnd.org/sravya/#projects>
 - Research towards goal reasoning and decision dynamics in autonomous agents to manage their own goals.
 - Experience in Probabilistic and Statistical models to manage agents goals in anomalous dynamic environments.
 - Publications in goal reasoning and goal operations in International Conferences.
- Aug 2017 – **Problem Recognition in Underwater Autonomous Vehicles, GRA, COLAB²-WSU.**
Dec 2018 Demo Link: <http://www.airnd.org/sravya/#projects>
 - Research towards goal reasoning and decision dynamics in autonomous agents to manage their anomalies.
 - Experience in Probabilistic and Statistical models to detect and respond to problem anomalies.
 - Publications in goal reasoning and problem detection in International Conferences.
- May 2016 – **Image Processing and Decision Dynamics using Baxter Robot, GRA, COLAB²-WSU.**
July 2017 Demo Link: <http://www.airnd.org/sravya/#projects>
 - Applied Convolutional Neural Networks to detect realworld objects using Baxter Robot's Cameras.
 - Speech to text conversion to understand human utterances for the Baxter robot
 - Real world implementation of goal achievement using Baxter robot.
- Jan 2016 – **Detect Gender Bias on Rate My Professor, INDEPENDENT RESEARCHER, DASELAB-WSU.**
May 2016 Lab Link: <https://daselab.cs.ksu.edu/>
 - Natural Language Processing and Document classification on large corpus of data to identify gender bias in STEM.
 - Performed sentiment analysis and topic modeling on large corpus of data.
 - Web scraped data from ratemyprofessors.com and performed several preprocessing techniques using Stanford's NLP Parser.

Teaching

- Feb 2022 – **Assistant Professor**, *DEPARTMENT OF MSCS, ST. OLAF COLLEGE*.
present*
 - Design and teach introductory to advanced level computer science courses for undergraduate classes.
 - Monitor and guide student's progress both inside and outside of class.
 - Mentor and manage several teaching assistants and research assistants.
- Aug 2019 – **Undergraduate Instructor**, *DEPARTMENT OF CSE, WRIGHT STATE UNIVERSITY*.
Dec 2019
 - Designed and taught the coursework for Introduction to Computer Programming (CS1160) for a total class size of 60 students.
 - Mentored several Undergraduate students from my class.
 - Worked with and mentored two GTA students.

Research

- Feb 2022 – **Assistant Professor**, *DEPARTMENT OF MSCS, ST. OLAF COLLEGE*.
Present
 - Obtained a startup fund of \$40,000.
 - Set up the research laboratory and mentor students in the field of artificial intelligence.
 - Collaborate with researchers and seek grant funding.
 - Publish, review and present at conferences and workshops.
- Jan 2019 – **Graduate Research Assistant**, *DEPARTMENT OF CSE, WRIGHT STATE UNIVERSITY*.
Dec 2021
 - Work on real world and simulated unmanned underwater robots, MOOS-IVP to create an underwater domain for testing the unmanned underwater vehicles.
 - Apply goal reasoning, planning methodologies to identify and respond to problems in a multi-agent setting in the underwater domain.
 - Collaborate with researchers from Michigan State University, Georgia Tech, and university of Georgia.
 - Publish and present the research findings at conferences and workshops.
- Jan 2018 – **Graduate Research Assistant**, *DEPARTMENT OF CSE, WRIGHT STATE UNIVERSITY*.
Dec 2018
 - Work on simulated unmanned underwater robots, MOOS-IVP to create an underwater domain for testing the unmanned underwater vehicles.
 - Apply goal reasoning, planning methodologies to identify and respond to problems in the underwater domain.
 - Collaborate with researchers from Australia and Lehigh University.
 - Publish and present the research findings at conferences and workshops.
- May 2016 – **Graduate Research Assistant**, *DEPARTMENT OF CSE, WRIGHT STATE UNIVERSITY*.
Dec 2017
 - Work on Baxter robot, Robot operating system, and computer vision to make the robot identify objects in the real world.
 - Apply goal reasoning, planning methodologies to reason about the changes in objects in the real world and update plans to achieve the goals.
 - Work with other researchers in laboratory.
 - Publish and present the research findings at conferences and workshops.
- Jan 2016 – **Independent Study**, *DEPARTMENT OF CSE, WRIGHT STATE UNIVERSITY*.
May 2016
 - Collect data from "ratemyprofessors.com" to identify gender bias on university professors from the students.
 - Collect data from internet by applying several data mining techniques.
 - Organize the collected data and apply natural language processing to perform sentiment analysis and identify bias.

Awards and Honors

- 2018 StartUp: **SquadUp**, won the October 2018 Hackathon conducted by **YCombinator** with 250 participants across 80 projects. <https://blog.ycombinator.com/october-2018-hackathon-recap/>
- 2016 – 2021 Worked under several prestigious grants: **NSF 1849131**; **ONR N00014-18-1-2009**; **AFOSR FA2386-17-1-4063**.

Publications

Journal, Conference and Workshop Publications

- 2022* Kondrakunta, S., Gogineni, V. R., & Cox, M. T. (In press). Agent Goal Management using Goal Operations. In *the Tenth Advances in Cognitive Systems Conference-2022*. Cognitive Systems Foundation.
- 2022* Gogineni, V. R., Kondrakunta, S., & Cox, M. T. (In press). Multi-agent Goal Delegation. In *the Tenth Advances in Cognitive Systems Conference-2022*. Cognitive Systems Foundation.
- 2021 Kondrakunta, S., Gogineni, V. R., & Cox, M. T. (2021, December). Agent Goal Management using Goal Operations. In *the Ninth Goal Reasoning Workshop at Advances in Cognitive Systems Conference-2021*. Cognitive Systems Foundation.
- 2021 Gogineni, V. R., Kondrakunta, S., & Cox, M. T. (2021, December). Multi-agent Goal Delegation. In *the Ninth Goal Reasoning Workshop at Advances in Cognitive Systems Conference-2021*. Cognitive Systems Foundation.
- 2021 Yuan, W., Munoz-Avila, H., Gogineni, V. R., Kondrakunta, S., Cox, M. T., & He, L., (in press). Task Modifiers for HTN Planning and Acting. In *the poster presentation at the Ninth Annual Conference on Advances in Cognitive Systems*. Cognitive Systems Foundation.
- 2021 Kondrakunta, S., Gogineni, V. R., Cox, M. T., Coleman, D., Tan, X., Lin, T., Hou, M., Zhang, F., McQuarrie, F., & Edwards, C. (in press). The Rational Selection of Goal Operations and the Integration of Search Strategies with Goal-Driven Marine Autonomy. In *the Ninth Annual Conference on Advances in Cognitive Systems*. Cognitive Systems Foundation.
- 2021 Cox, M. T., Mohammad, Z., Kondrakunta, S., Gogineni, V. R., Dannenhauer, D., & Larue, O. (in press). Computational Metacognition. In *the Ninth Annual Conference on Advances in Cognitive Systems*. Cognitive Systems Foundation.
- 2021 Kondrakunta, S., Gogineni, V. R., Molineaux, M., & Cox, M. T. (in press). Problem recognition, explanation and goal formulation. In *Fifth International Conference on Applied Cognitive Computing (ACC)*. Springer.
- 2021 Kondrakunta, S., & Cox, M. T. (in press). Autonomous Goal Selection Operations for Agent-Based Architectures. In *Fifth International Conference on Applied Cognitive Computing (ACC)*. Springer.
- 2020 Gogineni, V. R., Kondrakunta, S., Molineaux, M., & Cox, M. T. (2020, May). Case-Based Explanations and Goal Specific Resource Estimations. In *the Thirty-Third International Flairs Conference (pp. 407-412)*. AAAI Press.
- 2019 Kondrakunta, S., Gogineni, V. R., Brown, D., Molineaux, M., & Cox, M. T. (2019). Problem recognition, explanation and goal formulation. In *ACS Poster Collection-2019*. Cognitive Systems Foundation.
- 2019 Gogineni, V. R., Kondrakunta, S., Brown, D., Molineaux, M., & Cox, M. T. (2019, September). Probabilistic Selection of Case-Based Explanations in an Underwater Mine Clearance Domain. In *International Conference on Case-Based Reasoning (pp. 110-124)*. Springer, Cham.
- 2018 Kondrakunta, S., Gogineni, V. R., Molineaux, M., Munoz-Avila, H., Oxenham, M., & Cox, M. T. (2018). Toward problem recognition, explanation and goal formulation. In *6th Goal Reasoning Workshop at IJCAI/FAIM-2018*. IJCAI.
- 2018 Gogineni, V., Kondrakunta, S., Molineaux, M., & Cox, M. T. (2018). Application of case-based explanations to formulate goals in an unpredictable mine clearance domain. In *Proceedings of the ICCBR-2018 Workshop on Case-Based Reasoning for the Explanation of Intelligent Systems, Stockholm, Sweden (pp. 42-51)*. Springer, Cham.
- 2017 Dannenhaur, D., Munoz-Avila, H., & Kondrakunta, S. Goal-Driven Autonomy Agents with Sensing Costs. In *Working Notes of the 2017 IJCAI Goal Reasoning Workshop*. IJCAI.
- 2017 Kondrakunta, S., & Cox, M. T. (2017). Autonomous goal selection operations for agent-based architectures. In *Working Notes of the 2017 IJCAI Goal Reasoning Workshop*. IJCAI.
- 2017 Cox, M., Dannenhauer, D., & Kondrakunta, S. (2017, February). Goal operations for cognitive systems. In *Proceedings of the AAAI Conference on Artificial Intelligence (Vol. 31, No. 1)*. AAAI Press.
- 2015 Kishore, P. V. V., Rahul, R., Sravya, K., & Sastry, A. S. C. S. (2015, August). Crowd density analysis and tracking. In *2015 International Conference on Advances in Computing, Communications and Informatics (ICACCI) (pp. 1209-1213)*. IEEE.

Masters and Doctoral thesis

- 2017 Kondrakunta, S. (2017). *Implementation and Evaluation of Goal Selection in a Cognitive Architecture*. Browse all Theses and Dissertations. 1811. https://corescholar.libraries.wright.edu/etd_all/1811
- 2021 Kondrakunta, S. (2021). *Complex Interactions between Multiple Goal Operations in Agent Goal Management* [Doctoral dissertation, Wright State University]. OhioLINK Electronic Theses and Dissertations Center. http://rave.ohiolink.edu/etdc/view?acc_num=wright1641480194595227

Conferences and Workshops Attended

- 2022 Tenth Annual Conference in Advances in Cognitive Systems (ACS-22). George Mason University, Virginia, USA.
- 2021 Ninth Annual Conference in Advances in Cognitive Systems (ACS-21). Virtual, USA.
- 2021 Ninth Annual Goal Reasoning Workshop at Advances in Cognitive Systems Conference (GRW-21). Virtual, USA.
- 2021 The 2021 world congress in computer science, computer engineering and applied computing (CSCE-21). Las Vegas, USA.
- 2020 Eighth Annual Conference on Advances in Cognitive Systems (ACS-2020). Palo Alto, California, USA.
- 2019 Seventh Annual Conference on Advances in Cognitive Systems (ACS-2019). Massachusetts Institute of Technology, Massachusetts, USA. *Poster presentation on problem recognition.*
- 2018 Second Annual MIDCA Workshop. Wright State University, Ohio, USA. *Oral presentation on goal operations in cognitive architecture.*
- 2018 The 17th International Conference on Autonomous Agents and Multi-Agent Systems (AAMAS-2018). Stockholmsmässan, Stockholm, Sweden.
- 2018 Thirty-fifth International Conference on Machine Learning (ICML-2018). Stockholmsmässan, Stockholm, Sweden.
- 2018 The 23rd European Conference on Artificial Intelligence (ECAI-2018). Stockholmsmässan, Stockholm, Sweden.
- 2018 The 27th International Joint Conference on Artificial Intelligence (IJCAI-2018). Stockholmsmässan, Stockholm, Sweden.
- 2018 The 26th International Conference on Case-Based Reasoning (ICCBR-2018). Stockholmsmässan, Stockholm, Sweden.
- 2018 The 6th Goal Reasoning Workshop. Stockholmsmässan, Stockholm, Sweden. *Oral presentation on goal selection operation.*
- 2017 First Annual MIDCA Workshop. Wright State University, Ohio, USA. *Oral presentation on MIDCA Architecture.*

Service and Peer review

- 2022* Faulty supervisor for Linux ladies group at St.Olaf College
- 2022* Faulty chair for all female organized OleHacks hackathon to be held in March3-4 2023
- 2022 Session-V chair for the tenth advances in cognitive systems conference
- 2022 Sub-reviewer for the tenth advances in cognitive systems conference
- 2022 Reviewer and Program Committee member for Integrated Execution (IntEx) held at the 32nd International Conference on Automated Planning and Scheduling (ICAPS 2022).
- 2022 Invited talk at "Get to know your CS professor": Organized by Linux Ladies at St.Olaf College.
- 2021 Invited talk at the Sixth International Symposium on Intelligent Learning Environments held at Universidad de Córdoba-Colombia. November: 24th.
- 2021 **Chair for the Ninth Goal Reasoning workshop (GRW) held at the Advances in Cognitive Systems Conference. November: 15th, 2021.**
- 2020 Reviewer and Program Committee member for Integrated Execution (IntEx)/ Goal Reasoning workshop (GRW) held at the 30th International Conference on Automated Planning and Scheduling
- 2020 Sub-reviewer for 24th European Conference on Artificial Intelligence

2019 Organized annual Make-IT-Wright Hackathon at Wright State University to encourage undergraduate students to code

Hackathons

COMTOR DerbyHacks 3, University of Louisville, KY.

Project Link: <https://devpost.com/software/comtor>

- Technologies used: Flask, OpenCV, Tensorflow, Convolutional Neural Networks
- A Full stack application to train several actions and alarm the user or an organization when they are detected
- Evaluated on multiple real-world actions and obtained an average F1 score of 0.87.

HACK-STATA Hack-CWRU, Case Western Reserve University, OH.

Project Link: <https://devpost.com/software/hack-stata>

- Technologies used: Python, Neural Networks, Scikit-learn, Tableau
- A web application to visualize all the statistics related to a hackathon and recommend a hackathon upon user's profile.
- Web scrapped more than 10,000 hackathons to obtain the data.

VIRTUAL DOCTOR SpartahackIV, Michigan State University, MI.

Project Link: <https://devpost.com/software/your-virtual-doctor>

- Technologies used: Flask, SQLite, Google Maps API, Bayesian Model, Machine Learning.
- A Full stack application which acts as a personalized doctor for every internet user.
- Implemented recommendation system to the nearest hospital based on the symptoms.