

Swagat BHATTACHARYYA

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EDUCATION

Purdue School of Electrical and Computer Engr., West Lafayette, IN	GPA: 4/4 (107 Credits Completed)	MAY, 2022
• Honors College Graduate; BSE Electrical Engineering, BS Physics, BS Mathematics		
Morgantown High School, Morgantown, WV	GPA: 4.42(W)/4	MAY, 2018

RESEARCH EXPERIENCE

2.1 Past Positions

COMPUTATIONAL ELECTRONIC SYSTEMS LAB, LANE DEPT. OF COMPUTER SCI. AND ELECTRICAL ENGR, WVU	JUNE, 2014 – AUG., 2019
• Developed a gait analyzer to detect and study the progression of Parkinson's outside the clinical setting	
• Awarded a WVU Summer Undergraduate Research Experience appointment in Summer 2019	
• Synthesized interfacing software for a new field-programmable analog array (FPAA)	
• Developed the circuitry and training algorithms for a vehicle detector/classifier on a FPAA-based platform	
• Fabricated an optimized IC containing a novel, low-power analog-digital converter and low-PDP logic gates	
NATIONAL RADIO ASTRONOMY OBSERVATORY, GREEN BANK, WV	JULY, 2014
• Gathered spectroscopy data pertaining to the hydroxyl radical (OH) from several stellar sources	
• Analyzed data using information theoretic criteria and developed a peak crosscorrelating algorithm	

2.2 Publications

NON-REFEREED JOURNAL	Senthilvelan J, Bhattacharyya S , Tanner D, and Crites S, "Detection of the Interstellar Molecule OH in W3, W49, and Cassiopeia A using the 40-ft Telescope and the GBT", <i>Radio Astronomy</i> , 21-28, July-August, 2015
UNDER PREPARATION	1. Bhattacharyya S , Andryczik S, Graham D, "An Acoustic Vehicle Detector and Classifier Using a Reconfigurable Analog/Mixed-Signal Platform"
	2. Andryczik S, Dilello, Navidi M, Bhattacharyya S , Jared Baker, Rumburg B, and Graham D, "A Low-Power, Reconfigurable, Mixed-Signal Preprocessor for Resource-Constrained Applications"
	3. Bhattacharyya S , Abulaiha H, and Graham D, "DIMOS: A Low-Power, Fast Response Logic Gate Architecture"
	4. Bhattacharyya S and Senthilvelan J, "Detection of Interstellar Molecule OH in W3, W49, Cassiopeia A, K350, W75s, and NGC 7538 Using the 40-ft Telescope and the GBT"

2.3 Talks

INVITED	Senthilvelan J, Bhattacharyya S , Tanner D, Crites S, Coots T, "Detection of Interstellar Molecule OH in W3, W49, Cassiopeia A, K350, W75s, and NGC 7538 Using the 40-ft Telescope and the GBT", ALCon 2016, Washington, DC, August 10-13, 2016
CONTRIBUTED	Senthilvelan J, Bhattacharyya S , Tanner D, Crites S, "Detection of the Interstellar Molecule OH in W3, W49, and Cassiopeia A using the 40-ft Telescope and the GBT", SARA Conference, Green Bank, WV, June 21-24, 2015

2.4 Posters

1.	Bhattacharyya S , "DIMOS: A Low-Power, Fast Response Logic Gate Architecture," Intel ISEF 2018, Pittsburgh, PA, May 13-18, 2018
2.	Bhattacharyya S , "DIMOS: A Low-Power, Fast Response Logic Gate Architecture," WVSSEF 2018, Fairmont, WV, April 7, 2018
3.	Yan M, Bhattacharyya S , "myCAST: A Personalized Stroke Identification and Prevention System," Intel ISEF 2017, Los Angeles, CA, May 14-19, 2017
4.	Yan M, Bhattacharyya S , "myCAST: A Personalized Cerebrovascular Accident Self-Test," WVSSEF 2017, Fairmont, WV, April 1, 2017

SELECT HONORS AND AWARDS

[KEY: TEAM → †, SOLO → §]

2 nd place in Embedded Systems and 1 st place NSA research directorate award in Computing at the Intel ISEF	2018 §
67 th place (globally) at the American Association of Physics Teachers (AAPT) Physics Bowl (Sen. Div.)	2017 §
1 st place at the National Young Astronomer Awards – Featured in Reflector Magazine Vol. 68, No. 4, pg. 23	2016 †
Bronze Medal at the USA Physics Olympiad (USAPhO)	2017 §
Selected as one of two West Virginia delegates to the National Youth Science Camp	2018 §
Selected as a Purdue University Trustees Scholar	2018 §
Physics Photo Contest Finalist: Photo featured on the 2018-19 AAPT calendar	2018 §
2 nd , 1 st , and 2 nd place, respectively in the WV Regional High School Science Bowl competition	20(18,17,16) †
2 nd (tie), 1 st (tie), 2 nd , and 1 st place, respectively in the N. WV Chemistry Olympiad (Sen., Sen., Sen., and Jun.)	20(18,17,16,15) §
1 st place in the Annual Purdue JSA Japanese Speech and Skit Competition (1 st year)	2019 §

EXTRACURRICULAR EXPERIENCE

4.1 Leadership

Vice President of the Purdue Institute of Electrical and Electronics Engineers (IEEE) Student Branch	2019-20
Electrical Design and Fabrication Team Lead of the Purdue IEEE Engineering in Medicine and Biology Society	2019-20
Cofounder and Joint Head of the Morgantown High School (MHS) Physics Club	2016-18

4.2 Miscellaneous

Affiliations: Purdue IEEE, Purdue Honors College | · | **Tools:** MATLAB[®], Python, C, \LaTeX , Cadence Virtuoso[®], LTspice[®], KiCad

Languages: English, Bengali, Hindi, German, Japanese | · | **Music:** Violin, Indian Classical Singing, Bamboo Flute

Sports: Taekwondo (2nd Degree Black Belt), Tennis, Rock Climbing, Skateboarding