Curriculum Vitae

1. Name and full correspondence address:

Dr. Hemanta Kumar Mondal
Assistant Professor,
FF21, Department of Electronics and Communication Engineering,
National Institute of Technology Durgapur
M. G. Avenue, Durgapur- 713209
West Bengal, India.

2. Email(s) and contact number(s):

Email: hemanta.mondal@ece.nitdgp.ac.in,
hemantam@iiitd.ac.in
Contact no: +91-9434789047

3. Institution: National Institute of Technology Durgapur

4. Date of Birth: 16/04/1986

5. Gender: M

6. Category: Gen

7. Academic Qualification (Undergraduate Onwards)

Sl. No.	Degree	Year	Subject	University/Institution
1	B.Tech	2007	ECE	West Bengal University of Technology
2	M.Tech	2010	VLSI Design	Guru Gobind Singh Indraprastha University (GGSIPU)
3	Ph.D.	2017	ECE	IIIT Delhi

9. Ph.D. thesis title, Guide's Name, Institute/Organization/University, Year of Award.

Ph.D. Thesis Title:	"Power- and Performance-aware On-Chip Interconnection Architectures for Many-core Systems".
Guide's Name:	Prof. Sujay Deb, Dean (SW), Associate Professor, ECE, IIIT Delhi.
Institute:	IIIT Delhi
Year of Award:	August, 2017.

10. Work experience (in chronological order).

S. No.	Positions held	Name of the Institute	From	To
1	Software Engineer	ATS, Hyderabad	June 2007	July 2008
2	Design Engineer (Internship)	Freescale Semiconductor Pvt. Ltd. India	July 2010	Dec 2010
3	Postdoctoral Fellow	UBS, CNRS Lab STICC, Lorient, France	October 2017	July 2017
4	Assistant Professor	IIIT Guwahati	July 2017	Dec 2017
5	Assistant Professor	NIT Durgapur-713209	Dec 2018	Present

11. Professional Recognition/ Award/ Prize/ Certificate, Fellowship received by the applicant.

S. No	Name of Award	Awarding Agency	Year
1	Reviewer Certificate	Wiley	2022
2	Certificate Appreciation	RKJIT, Ghaziabad	2021
3	Certificate of Reviewing	Computer and Electrical Engineering, Elsevier	2019
4	Faculty Fellowship Award	VLSI Design Conference	2019
5	Certificate of Reviewing	Sustainable Computing: Informatics and Systems, Elsevier	2018
6	TCVLSI Best Paper Award	IEEE iNIS Conference	2017
7	VLSI Design fellowship award	VLSI Design Conference	2017
8	VDAT fellowship award	VDAT Conference	2016
9	SOCC Student travel grant	IEEE SOCC Conference	2014
10	C-DAC Fellowship	C-DAC Noida	2010
11	M.Tech. (VLSI Design) with Distinction	GGSIPU	2010
12	Merit Recognition Certificate	National IT Aptitude Test, NIIT	2006

12. **Book Chapter**:

Hemanta Kumar Mondal, *Prasenjit Maji, and Kunal Dhibar, "Hardware Acceleration Strategies for Signal and Image Processing Applications",* ***CRC Press****, June, 2022. (In press)*

13. **List of Journals Publications**

[1]. Amal Thomas K, Soumyajit Poddar, and ***Hemanta Kumar Mondal****, "A CNN Hardware Accelerator using Triangle based Convolution",* ***ACM Journal on Emerging Technologies in Computing Systems (ACM JETC)****, June 2022. (In press)*

[2]. ***Hemanta Kumar Mondal****, SARNAVA KONAR, Poulomi Hore, Ramapati Patra, Pradipta Sarkar, Sujay Deb, "Interconnect Support for Energy Efficient and High Bandwidth Memory Access in CMPs",* ***Sustainable Computing: Informatics and Systems, Elsevier****, March, 2022.*

[3]. Prasenjit Maji, ***Hemanta Kumar Mondal****, A. P. Roy, S. Poddar and S. P. Mohanty, "iKardo: An Intelligent ECG Device for Automatic Critical Beat Identification for Smart Healthcare," in* **IEEE Transactions on Consumer Electronics***, vol. 67, no. 4, pp. 235-243, Nov.* ***2021****, doi: 10.1109/TCE.2021.3129316.*

[4]. Arnab Kumar Biswas, Navonil Chatterjee, ***Hemanta Kumar Mondal****, G. Gogniat and J. -P. Diguet, "Attacks Toward Wireless Network-on-Chip and Countermeasures," in* **IEEE Transactions on Emerging Topics in Computing***, vol. 9, no. 2, pp. 692-706, 1 April-June* ***2021****, doi: 10.1109/TETC.2020.2973427.*

[5]. Maurya SK, Sarkar S, ***Hemanta Kumar Mondal****, Ohshima H, Gopmandal PP. "Electrophoresis of soft particles with hydrophobic inner core grafted with pH-regulated and highly charged polyelectrolyte layer,"* ***Electrophoresis****.* ***2021*** *Aug 16. doi: 10.1002/elps.202100147. Epub ahead of print. PMID: 34398491.*

[6]. Ghosh, A., Roy, A.P., Patra, R. ***Hemanta Kumar Mondal***. *"Designing Efficient NoC-Based Neural Network Architectures for Identification of Epileptic Seizure,"* ***SN COMPUT. SCI.***, ***Springer*** *2, 363 (**2021**).* https://doi.org/10.1007/s42979-021-00756-9

[7]. ***Hemanta Kumar Mondal***, *Sri Harsha Gade, Raghav Kishore, Sujay Deb, "P2NoC: Power- and Performance-aware NoC Architectures for* ***Sustainable Computing," Sustainable Computing: Informatics and Systems, Elsevier****, Volume 16,* ***2017****, Pages 25-37, ISSN 2210-5379,* https://doi.org/10.1016/j.suscom.2017.08.005.

[8]. ***Hemanta Kumar Mondal***, *S. H. Gade, M. S. Shamim, S. Deb and A. Ganguly, "Interference-Aware Wireless Network-on-Chip Architecture Using Directional Antennas," in* **IEEE Transactions on Multi-Scale Computing Systems**, *vol. 3, no. 3, pp. 193-205, 1 July-Sept.* ***2017****, doi: 10.1109/TMSCS.2016.2595527.*

[9]. ***Hemanta Kumar Mondal***, *S. H. Gade, S. Kaushik and S. Deb, "Adaptive Multi-Voltage Scaling with Utilization Prediction for Energy-Efficient Wireless NoC," in* **IEEE Transactions on Sustainable Computing**, *vol. 2, no. 4, pp. 382-395, 1 Oct.-Dec.* ***2017****, doi: 10.1109/TSUSC.2017.2742219.*

13. List of Conference Publications

Sl. No.	Title of paper	Author(s)	Name of the Conference	Date
1.	An Efficient NoC-Based ANN Framework for Epileptic Seizure Recognition	Ayut Ghosh, Arka Prava Roy and Ramapati Patra; Ashis Kumar Mal Hemanta Kumar Mondal	6th IEEE International Symposium on Smart Electronic Systems (iSES)-2020	VIT Chennai, India, December 2020.
2.	Broadcast Mechanism Based on Hybrid Wireless/Wired NoC for Efficient Barrier Synchronization in Parallel Computing	**Hemanta Kumar Mondal**, Navonil Chatterjee, Rodrigo Cataldo, Jean-Philippe Diguet	25th asia and south design automation conference (**ASP-DAC 2020**), Beijing, China.	January, 2020
3.	NoCSNN: A Scalable Interconnect Architecture for Neuromorphic Computing Systems	Ayut Ghosh; Aneek Jash; Ramapati Patra; Hemanta Kumar Mondal	IEEE International Symposium on Devices, Circuits and Systems (ISDCS-2020)	Howrah, India, March 2020
4.	Classification of ECG Signals for IoT-based Smart Healthcare Applications using WBAN	Arka Prava Roy; Sandipan Chatterjee; Prasenjit Maji; Hemanta Kumar Mondal	IEEE International Symposium on Devices, Circuits and Systems (ISDCS-2020)	Howrah, India, March 2020
5	3D-NoCNN: NoC based Clustered Architecture for Neural Networks	Aneek Jash, Ayut Ghosh, Naif Noyel, Ramapati Patra, Hemanta Kumar Mondal:	24th International Symposium on VLSI Design and Test (VDAT-2020)	July 2020

6.	CDMA-based multiple multicast communications on WiNOC for efficient parallel computing	Navonil Chatterjee, **Hemanta Kumar Mondal**, Rodrigo Cataldo, Jean-Philippe Diguet	13th IEEE/ACM International Symposium on Networks-on-Chip (**NOCS 2019**), New York	October, 2019
7.	Power-aware IoT based Smart-Health Monitoring System using Wireless Body Area Network	Jitumoni Sharma, Akash Katiyar, Rakesh Biswas, **Hemanta Kumar Mondal**	20th International Symposium on Quality Electronic Design (**ISQED 2019**), Santa Clara	March 2019
8.	State Preserving Dynamic DRAM Bank Re-Configurations for Enhanced power efficiency	Kaustav Goswami, **Hemanta Kumar Mondal**, Shirshendu Das, Dip Sankar Banerjee	20th International Symposium on Quality Electronic Design (**ISQED 2019**), Santa Clara, USA	March 2019
9.	Accurate Channel Models for Realistic Design Space Exploration of Future Wireless NoCs	Ihsan El Masri, Pierre-Marie Martin, **Hemanta Kumar Mondal**, Thierry Le Gouguec, Christian Roland, , RozennAllanic, Cédric Quendo and Jean-Philippe Diguet	12th IEEE/ACM International Symposium on Networks-on-Chip (**NOCS 2018**) in conjunction with Embedded Systems Week (**ESWEEK**) Torino, Italy	October 2018
10.	Broadcast Enabled Low Power Wireless Interconnection Networks for Parallel Computing	**Hemanta Kumar Mondal**, Rodrigo CadoreCataldo, Cesar Augusto Missio Marcon, Kevin Martin, Sujay Deb and Jean-Philippe Diguet	31st IEEE International System-on-Chip Conference (**SOCC**), Washington, DC USA	September, 2018
11.	Power and Performance Efficient Network-on-Chip Router for Internet of Things Applications	Sidhartha Sankar Rout, **Hemanta Kumar Mondal**, Rohan Juneja, Sri Harsha Gade and Sujay Deb	19th International Symposium on Quality Electronic Design (**ISQED 2018**), Santa Clara, USA	March 2018
12	Utilization Aware Robust Channel Access Mechanism for Wireless NoCs	Sri Harsha Gade, Sidhartha Sankar Rout, Mitali Sinha, **Hemanta Kumar Mondal**, and Sujay Deb	IEEE International Symposium on Circuits and Systems (**ISCAS 2017**), Florence, Italy	May 2018
13	"Energy Efficient NoC Router for High Throughput Applications in Many-core GPUs"	Shresth Bansal, **Hemanta Kumar Mondal**, Sri Harsha Gade and Sujay Deb	IEEE International Symposium on Nanoelectronic and Information Systems (**iNIS**)	December 2017
14	"Path Loss-aware Adaptive Transmission Power Control Scheme for Energy-efficient Wireless NoC"	Shashwat Kaushik, Muni Aggarwal, **Hemanta Kumar Mondal**, Sri Harsha Gade and Sujay Deb	60th IEEE International Midwest Symposium on Circuits and Systems (**MWSCAS**)	October 2017

15	"Energy-efficient Transceiver for Wireless NoC"	**Hemanta Kumar Mondal**, Shashwat Kaushik, Sri Harsha Gade, and Sujay Deb	30th International Conference on VLSI Design (**VLSID**)	January 2017
16	"Energy-efficient Reconfigurable Framework for Evaluating Hybrid NoCs"	Raghav Kishore, **Hemanta Kumar Mondal** and Sujay Deb	20th International Symposium on VLSI Design and Test (**VDAT**)	May 2016
17	"Adaptive multi-voltage scaling in wireless NoC for high performance low power applications"	**Hemanta Kumar Mondal**, Sri Harsha Gade, Raghav Kishore, and Sujay Deb	Design, Automation & Test in Europe Conference & Exhibition (**DATE**)	April 2016
18	"Power Efficient Router Architecture for Wireless Network-on-Chip"	**Hemanta Kumar Mondal**, Sri Harsha Gade, Raghav Kishore, Shashwat Kaushik and Sujay Deb	17th International Symposium on Quality Electronic Design (**ISQED**)	March 2017
19	"Power- and performance-aware fine-grained reconfigurable router architecture for NoC"	**Hemanta Kumar Mondal**, Sri Harsha Gade, Raghav Kishore, and Sujay Deb	6th IEEE International Green Computing Conference and Sustainable Computing Conference (**IGSC**)	January 2016
20	"A Hardware and Thermal Analysis of DVFS in a Multi-core System with Hybrid WNoC Architecture"	Sri Harsha Gade, **Hemanta Kumar Mondal**, and Sujay Deb	28th International Conference on VLSI Design (**VLSID**)	February 2015
21	"Wireless network-on-chip: a new era in multi-core chip design"	**Hemanta Kumar Mondal**, and Sujay Deb	25nd IEEE International Symposium on Rapid System Prototyping (**RSP**) in conjunction with ESWeek'14	December 2014
22	"An energy efficient wireless Network-on-Chip using power-gated transceivers"	**Hemanta Kumar Mondal**, and Sujay Deb	27th IEEE International System-on-Chip Conference (**SOCC**)	November 2014
23	"An Efficient Hardware Implementation of DVFS in Multi-core System with Wireless Network-on-Chip"	**Hemanta Kumar Mondal**, Sri Harsha Gade and Sujay Deb	IEEE Computer Society Annual Symposium on VLSI (**ISVLSI**)	September 2014
24	"Energy efficient on-chip wireless interconnects with sleepy transceivers"	**Hemanta Kumar Mondal**, and Sujay Deb	8th IEEE Design and Test Symposium (**IDT**)	January 2013

25	"SoC Time to Market Improvement through Device Driver Reuse: An Industrial Experience"	Srivastava, R., Mudgil, N., Gupta, G., **Hemanta Kumar Mondal**	IEEE International Symposium on Electronic System Design (**ISED**)	December 2012

14. **Workshop/ Conference/ Short Term Programme Organized as a Coordinator/ Convenor/ Session Chair:**

1. **Coordinator** in the Faculty Development Programme on "VLSI Chip Design Hands on using open Source EDA" jointly organised by **Electronics and ICT Academics** under the "Scheme of financial assistance for setting up of Electronics and ICT Academics" by **MeitY, Govt. of India** from 8th July to 12th July 2019.

2. **Chair** a technical session on Special Track: "Hardware Accelerators for IoT –Edge Computing (HAI)", under 7th IEEE International Symposium on Smart Electronics Systems (iSES-2021), 18-22 December, 2021.

3. **Program Coordinator** of one month Short Term Training & Internship Program on "VLSI Embedded Systems and IOT (VLeSi 2022)" organised by Department of Electronics and Communication, NIT Durgapur from 15th July to 14th August 2022.

4. **Program coordinator** of the one-day technical colloquium (4th Research Scholar Day) in the ECE department on 23rd September 2022.

15. **Any other Information**

Talks/ Presentations	Topic and Venue
Speaker	One-week Hands-on Training on "Design and Characterization of Devices and Circuits for Electronic Systems (DC2ES)" on 'VLSI Chip Design: RTL-to-GDSII Flow', 20 Sept. 2022
Speaker	Short Term Training & Internship Program on "VLSI Embedded Systems and IOT (VLeSi 2022)" organised by Department of Electronics and Communication, NIT Durgapur from 15th July to 14th August 2022.
Speaker	FDP on "Future Advancements in the field of Telecommunication and Embedded System" at RKJIT, 27th August 2021.
Research Seminar (CNRS Lab-STICC)	**Hemanta Kumar Mondal**, "Broadcast Enabled Low Power Interconnections Networks for Parallel Applications." 3rd April, 2018, CNRS Lab-STICC, Lorient, France.
Ketchup talk (IIIT Delhi)	**Hemanta Kumar Mondal,** "Power- and Performance-aware On-Chip Interconnection Architectures for Manycore Systems, August, 2017, IIITD.
PhD Forum (DATE 2017)	**Hemanta Kumar Mondal**, "P^{2}NoC: Power and Performance-aware Network-on-Chip Architecture for Multi-core Systems," Presented at **DATE2017 PhD Forum** Conference, Lausanne, Switzerland, March, 2017.
Tutorial (VLSID 2017)	Sujay Deb, **Hemanta Kumar Mondal**, Sri Harsha Gade, "Communication Infrastructure for Future Exascale Processors," Presented at **VLSID conference**, Hyderabad, January 7-11, 2017.
Tutorial (VDAT 2017)	Sujay Deb, **Hemanta Kumar Mondal**, Sri Harsha Gade, "Energy Efficient Network On-chip Design for Future Many-core Processors," Presented at **VDAT conference**, IIT Guwahati, May 24, 2016.

PhD Forum (VDAT 2016)	**Hemanta Kumar Mondal**, "Power and Performance-aware Network-on-Chip Architecture," Presented at **VDAT Conference**, IIT Guwahati, May 27, 2016.
Research Showcase (IIIT Delhi)	**Hemanta Kumar Mondal**, Sri Harsha Gade, Raghav Kishore, Sujay Deb: "Adaptive multi-voltage scaling in wireless NoC for high performance low power applications," Presented at **Research Showcase**, March, IIITD, 2016.
Workshop (MNIT)	**Hemanta Kumar Mondal**, Sri Harsha Gade, Sujay Deb, "Power-Aware Fine-Grained Reconfigurable Router Architecture for NoC," Presented in International Project Workshop on Network-on-Chip at MNIT Jaipur, December 10-12, 2015.