**Syed Murtaza Arshad**

4th Year Ph.D. Candidate, Electrical & Computer Engineering

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| **EDUCATION** | | | | | | | |
| Jan 2022 –  Ongoing | | | | **Ph.D.** Electrical & Computer Engineering  *Advisors: Rizwan Ahmad, Ph.D. & Lee Potter, Ph.D.*  **The Ohio State University, Columbus**, OH, US | | GPA: **4.0/4.0**  **Post-candidacy** |
| Jan 2022 –  May 2024 | | | | **M.S.** Electrical & Computer Engineering,  **The Ohio State University, Columbus**, OH, US | | GPA: **4.0/4.0** |
| Oct 2015 –  May 2019 | | | | **B.S.** Electrical Engineering with Honors **|** Gold Medalist  **University of Engineering and Technology, Lahore**, Pakistan | | GPA: **3.95/4.0**  Rank: 1/142 |
| **WORK EXPERIENCE** | | | | | | | |
| May 2025 –  Ongoing | | | | **Canon Medical Research USA, Inc. (CMRU)**  *MR Feature Development Research Scientist Intern* | | Cleveland,  Ohio |
| Jan 2022 –  Ongoing | | | | **The Ohio State University**  *Graduate Research Associate* | | Columbus,  Ohio |
| Jul 2019 –  Dec 2021 | | | | **ICI Pakistan, Ltd.**  *Electrical & Instrumentation Manager* | | Sheikhupurra,  Pakistan |
| Jun 2018 –  Aug 2018 | | | | **Schlumberger, Ltd**  *Electrical Engineering Intern* | | Islamabad,  Pakistan |
| Jul 2017 –  Sep 2017 | | | | **Lahore University of Management Sciences (LUMS)**  *Research Intern* | | Lahore,  Pakistan |
| **RESEARCH SKILLS** | | | | | | | |
| Cardiac MRI, whole-heart imaging, real-time imaging, low-field imaging, flow imaging, dynamic imaging, optimization algorithms, image reconstruction, machine learning, deep learning. | | | | | | | |
| **PUBLICATIONS & RESEARCH WORK** | | | | | | | |
| ***Journal Articles*** | | | | | | | |
| 2024 | *Title:*  *Authors:*  *Journal:*  *Link:* | | | **Motion-robust free-running volumetric cardiovascular MRI. |** [GitHub Code Link](https://github.com/OSU-MR/motion-robust-CMR)  **S.M. Arshad**, L. C. Potter, C. Chen, Y. Liu, et al.  *Magnetic Resonance in Medicine 92, no. 3 (2024): 1248-1262.*  <https://doi.org/10.1002/mrm.30123> | | | |
| 2025 | *Title:*  *Authors:*  *Journal:*  *Link:* | | | **Accelerated Real-time Cine and Flow Under In-magnet Staged Exercise.**  P. Chandrasekaran, C. Chen, Y. Liu, **S.M. Arshad**, et al.  *Journal of Cardiovascular Magnetic Resonance (2025): 101894.*  <https://doi.org/10.1016/j.jocmr.2025.101894> | | | |
| 2025 | *Title:*  *Authors:*  *Journal:*  *Link:* | | | **Motion-Guided Deep Image Prior for Cardiac MRI**  M. Vornehm, C. Chen, M.A. Sultan, **S.M. Arshad**, et al.  Under revision at *Magnetic Resonance in Medicine (MRM)*  <https://arxiv.org/abs/2412.04639> | | | |
| 2025 | *Title:*  *Authors:*  *Journal:* | | | **Achieving high heart rate with in-magnet exercise Cardiac MRI.**  C.D. Crabtree, J. Stoner, P. Chandrasekaran, Y. Liu, **S.M. Arshad**, et al.  Under revision at *Journal of Cardiovascular Magnetic Resonance (JCMR)* | | | |
| ***Peer-reviewed Abstracts*** | | | | | | | |
| ***First-authored*** | | | | | | | |
| 2025 | *Title:*  *Authors:*  *Conference:*  *Link:* | | | **EMORe: Motion-robust XD-CMR reconstruction using Expectation-**  **Maximization (EM) algorithm.**  **S. M. Arshad**, L. C. Potter, Xuan Lei, R. Ahmad  *Society for Cardiovascular Magnetic Resonance* ***(SCMR) 2025*** *Annual Scientific Sessions****,* Washington, DC*.*** Publishedin *Journal of Cardiovascular Magnetic Resonance, Vol. 27.*  <https://doi.org/10.1016/j.jocmr.2024.101509> | | | |
| 2024 | *Title:*  *Authors:*  *Conference:*  *Link:* | | | **Motion-robust 3D cine imaging using compressive recovery with outlier rejection.**  **S.M. Arshad**, L.C. Potter, C. Chen, et al.  *Society for Cardiovascular Magnetic Resonance* ***(SCMR) 2024*** *Annual Scientific Sessions****,* London, UK*.*** Publishedin *Journal of Cardiovascular Magnetic Resonance, Vol. 26.*  <https://doi.org/10.1016/j.jocmr.2024.100315> | | | |
| 2023 | *Title:*  *Authors:*  *Conference:*  *Link:* | | | **Motion artifact reduction in self-gated CMR 4D flow imaging under exercise stress.**  **S.M. Arshad**, C. Chen, Y. Liu, et al.  *International Society for Magnetic Resonance in Medicine* ***(ISMRM) 2023*** *Annual Meeting,* **Toronto, ON, Canada.** Published in *Proc. Intl. Soc. Mag. Reson. Med., Vol. 33.*  <https://doi.org/10.58530/2023/1087> | | | |
| ***Co-authored*** | | | | | | | |
| 2025 | *Title:*  *Authors:*  *Conference:*  *Link:* | | | **Ferumoxytol-enhanced free-running 5D whole-heart CMR at 0.55 T.**  X. Sieber, P. Chandrasekaran, J. Varghese, Y. Liu, C. Roy, J. Yerly, **S.M. Arshad**, et al.  *Society for Cardiovascular Magnetic Resonance* ***(SCMR) 2025*** *Annual Scientific Sessions****,* Washington, DC*.*** Publishedin *Journal of Cardiovascular Magnetic Resonance, Vol. 27.*  <https://doi.org/10.1016/j.jocmr.2024.101341> | | | |
| 2025 | *Title:*  *Authors:*  *Conference:*  *Link:* | | | **Motion-Guided Deep Image Prior for Dynamic Cardiac MRI.**  M. Vornehm, C. Chen, M.A. Sultan, **S.M. Arshad**, et al.  *International Society for Magnetic Resonance in Medicine* ***(ISMRM) 2025*** *Annual Meeting,* **Honolulu, Hawaiʻi**. Published in *Proc. Intl. Soc. Mag. Reson. Med., Vol. 33.*  <https://submissions.mirasmart.com/ISMRM2025/Handlers/ViewTeaser.ashx?esbpgm=2906_120> | | | |
| 2025 | *Title:*  *Authors:*  *Conference:*  *Link:* | | | **Motion-Guided Deep Image Prior for 3D Real-Time Cine (M-DIP-3D).**  C. Chen, M. Vornehm, M.A. Sultan, **S.M. Arshad**, et al.  *International Society for Magnetic Resonance in Medicine* ***(ISMRM) 2025*** *Annual Meeting,* **Honolulu, Hawaiʻi**. Published in *Proc. Intl. Soc. Mag. Reson. Med., Vol. 33.*  <https://submissions.mirasmart.com/ISMRM2025/Handlers/ViewTeaser.ashx?esbpgm=9952_2770> | | | |
| 2025 | *Title:*  *Authors:*  *Conference:*  *Link:* | | | **Free-Running Time-Resolved 3D+t CMR at 40 Hz Under 2 Minutes using Cartesian Sampling and CMR-MOTUS.**  T.E Olausson, M.L. Terpstra, E. Versteeg, **S.M. Arshad**, et al.  *International Society for Magnetic Resonance in Medicine* ***(ISMRM) 2025*** *Annual Meeting,* **Honolulu, Hawaiʻi**. Published in *Proc. Intl. Soc. Mag. Reson. Med., Vol. 33.*  <https://submissions.mirasmart.com/ISMRM2025/Handlers/ViewTeaser.ashx?esbpgm=37_324> | | | |
| 2023 | *Title:*  *Authors:*  *Conference:* | | | **Biventricular and hemodynamic assessment under multi-stage exercise using real-time CMR.**  P. Chandrasekaran, C. Chen, Y. Liu, C. Crabtree, **S.M. Arshad**, et al.  *International Society for Magnetic Resonance in Medicine* ***(ISMRM) 2023*** *Annual*  *Meeting,* **Toronto, ON, Canada.** Published in *Proc. Intl. Soc. Mag. Reson. Med., Vol. 33.* | | | |
|  | *Link:* | | | <https://doi.org/10.58530/2023/1078> | | | |
| **INVENTIONS & PATENTS** | | | | | | | |
| 2024 | *Published Patent:*  *Publication#:*  *Link:* | | | | **Systems and Methods for Cardiovascular Magnetic Resonance Imaging.**  *WO/2024/238469*  <https://patentscope.wipo.int/search/en/detail.jsf?docId=WO2024238469> | | |
| 2025 | *Pending Patent:*  *Application#:*  *Link:* | | | | **Motion Robust Cardiovascular Imaging.**  63/663,874  [https://drive.google.com/file/d/1-YaVKiiuCUCqnJGDdj\_4LqgocqfurmsG](https://drive.google.com/file/d/1-YaVKiiuCUCqnJGDdj_4LqgocqfurmsG/) | | |
| 2019 | *Prototype:*  *Recognition:*  *Link:* | | | | **iSight: Computer Vision & Ultrasonic Sensor based Smart Cane & Glasses for the Visually Impaired |** *Developed as senior-year capstone project*  **IEEE IAS Humanitarian Project Award** at *54th IEEE Annual Meeting,* ***Baltimore, MD****.*  <https://youtu.be/wlyYk-eeM3M?si=9IWfO-LSmK2pj7o1> | | |
| PRESENTATIONS | | | | | | | |
| ***Oral Presentations*** | | | | | | | |
| 2025 | **“EMORe: Motion-robust free-breathing volumetric cardiovascular magnetic resonance image reconstruction using Expectation-Maximization (EM) algorithm.”**  *2025 Hayes Advanced Research Forum*, **Columbus, OH**. | **2nd Place Award Winner** | | | | | | |
| 2025 | **“EMORe: Motion-robust XD-CMR reconstruction using Expectation-Maximization (EM) algorithm.”**  *SCMR ’25 Scientific Sessions: Motion Compensation Session*, **Washington, DC**. | | | | | | |
| 2024 | **“Motion robust 3D cine imaging using Compressive Recovery with Outlier Rejection (CORe).”**  *SCMR ’24 Scientific Sessions: Dealing with Motion Session*, **London, UK.** | | | | | | |
| 2023 | **“Motion artifact reduction in self-gated CMR 4D flow imaging under exercise stress.”**  *ISMRM’23: Advanced Flow & Angiography Power Pitch*, **Toronto, Canada.** | **Among top 2.7% abstracts** | | | | | | |
| ***Poster Presentations*** | | | | | | | |
| 2024 | **“EMORe: Motion-robust XD-CMR reconstruction using Expectation-Maximization (EM) algorithm.”**  *Kraus Memorial Poster Competition ’24,* **Columbus, OH.** | **2nd Place Award Winner** | | | | | | |
| 2024 | **“EMORe: Motion-robust XD-CMR reconstruction using Expectation-Maximization (EM) algorithm.”**  *19th Annual Research Day for the Davis Heart and Lung Research Institute (DHLRI),* **Columbus, OH.** | | | | | | |
| 2023 | “**Motion-robust free-running volumetric cardiovascular MRI.”**  *Kraus Memorial Poster Competition’23,* **Columbus, OH.** | | | | | | |
| HONORS & AWARDS | | | | | | | |
| 2025 | | 2nd Place Award, 2025 Hayes Advanced Research Forum, Columbus, OH. | [Link](https://cgs.osu.edu/programs-events/edward-f-hayes-advanced-research-forum/hayes-2025-winners) | | | | | |
| 2025 | | Best Image Award, Society for Cardiovascular Magnetic Resonance Imaging, Washington, DC. | [Link](https://drive.google.com/file/d/1okTO012bEZzF9Dnhrm4L-Jkeuoy0FN_G/view?usp=sharing) | | | | | |
| 2024 | | 2nd Place Award, Kraus Memorial Poster Competition, The Ohio State University. | [Link](https://ece.osu.edu/news/2024/10/celebrating-innovation-john-d.-and-alice-nelson-kraus-memorial-poster-competition) | | | | | |
| 2024 | | Graduate Associate Leadership Award (GALA), The Ohio State University. | [Link](https://gradsch.osu.edu/news/2024/04/11/leadership-celebrated-2023-24-graduate-associate-leadership-award) | | | | | |
| 2019 | | 6 Gold Medals for Academic Excellence, University of Engineering & Technology, Lahore. | [Link](https://drive.google.com/file/d/1oqXyNVq2z8PXG6CLvtaYEiOCS9Ax3h0y/view?usp=sharing) | | | | | |
| 2019 | | Performance Award, Electrical Engineering Class of 2019, University of Engineering & Technology, Lahore. | [Link](https://drive.google.com/file/d/16Fd3_x_KDBz53T609yP0RXdrlV_akO64/view?usp=sharing) | | | | | |
| 2019 | | IEEE IAS Humanitarian Project Award, 54th IEEE Annual Meeting, Baltimore, MD. | [Link](https://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=8796463) | | | | | |
| 2019 | | 1st Place, DICE Virtual Innovation National Competition, Pakistan. | [Link](http://diceinnovationportal.com/eventreports/DICE_Report_uet19.pdf) | | | | | |
| 2019 | | Best Project in Computer Engineering Award, Department of Electrical Engineering, University of Engineering Technology, Lahore, Pakistan. | [Link](https://drive.google.com/file/d/1oqwoYfL8qx7S2oIQRheIujw9-MIm4jcX/view?usp=sharing) | | | | | |
| 2015 –  2019 | | Dean’s Merit Scholarship Award for all semesters, granted to the top 10 undergraduate students each semester at the University of Engineering & Technology, Lahore. | | | | | |
| 2013 –  2019 | | Awarded National Talent Scholarship throughout high school and undergraduate studies; granted to the top 50 students at the state level based on academic performance. | | | | | |
| LEADERSHIP & SERVICE | | | | | | | |
| 2022 –  Present | | | ***Delegate, ECE Graduate Program, Council of Graduate Students, The Ohio State University***   * Represented the department and voiced constituent concerns at monthly council meetings. * Organized Student Engagement Event (Apr 2023) to boost social engagement; received special recognition from ECE graduate program coordinators. | | | | |
| 2023 –Present | | | ***Chair, Housing & Family Affairs Committee, The Ohio State University***   * Successfully advocated for creation of a dedicated housing resource for graduate students by engaging university leadership and participating in the recruitment and onboarding process. * Organized a legal guidance workshop (Nov 2023) to help students navigate tenant rights. * Initiated a pre-arrival housing orientation for incoming international students in collaboration with the Office of International Affairs. | | | | |
| 2023 –2024 | | | ***General Secretary, Graduate Muslim Club (GMC), The Ohio State University***   * Initiated and led 'Share Table Meetings' for monthly interfaith and cultural exchanges. * Organized Eid celebration (June 2023) to foster community for students, faculty, and families celebrating away from home. * Hosted two educational sessions (Apr & Sept 2023) to help international students understand and navigate the U.S. financial system. | | | | |
| 2024 –2025 | | | ***Mentor, Undergraduate Research Mentorship***   * Supervised an undergraduate student on research spanning one academic year | | | | |
| 2022 –2025 | | | ***Speaker, Graduate Admissions & International Student Advocacy***   * Hosted annual webinars at UET Lahore, guiding students on U.S. graduate admissions. * Invited by the International Student Affairs Committee at OSU to share my journey. (March 2025) | | | | |
| 2023 –2024 | | | ***Judge, Career Development Grant (CDG), Ray Travel Award, and HackOHI/O***   * Reviewed graduate student travel grant applications and hackathon submissions at OSU. | | | | |
| 2023 | | | ***Outreach Presenter, COSI Science Festival***   * Represented the OSU ECE department and organized interactive electrical engineering demos to spark interest among youth. | | | | |
| 2023 | | | ***Mentor, GUIDE Peer Mentoring Program, The Ohio State University***   * Provided mentorship to incoming graduate students to support their transition to graduate life. | | | | |
| 2022 | | | ***Volunteer & Outreach Lead, Indus Hospital Fundraiser, Columbus Convention Center***   * Helped raise $125,000 for flood victims in Pakistan through a fundraiser in Oct 2022 at Columbus. | | | | |
| REFERENCES | | | | | | | |
| **Prof. Rizwan Ahmad, Ph.D**.**—*Advisor***  *Professor*, Electrical & Computer Engineering and Biomedical Engineering, The Ohio State University.  Email: [ahmad.46@osu.edu](mailto:ahmad.46@osu.edu)  Website: [https://u.osu.edu/ahmad](https://u.osu.edu/ahmad/) | | | | | | | |
| **Prof. Lee C. Potter, Ph.D.—*Advisor***  *Professor*, Electrical & Computer Engineering, The Ohio State University.  Email: [potter.36@osu.edu](mailto:potter.36@osu.edu)  Website: <https://ece.osu.edu/people/potter.36> | | | | | | | |