

RICHARD S. HANNA

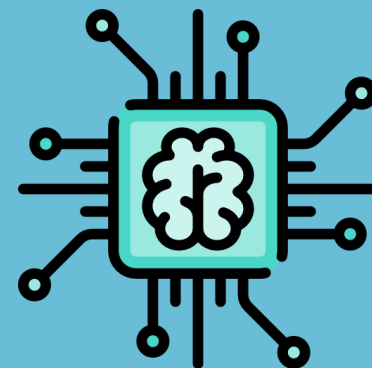
In my role as a data analyst and engineer at CHOP, I develop solutions to drive clinical decisions and support clinical needs. The scope of my work includes pediatric cardiac arrest, endotracheal intubation, and quality improvement initiatives both within the hospital and externally at facilities internationally. Two of my largest projects involve the [Pediatric Resuscitation Quality Collaborative \(pediRES-Q\)](#) and the [National Emergency Airway Registry \(NEAR\)](#) for pediatrics and neonates. My passion is to provide both education and problem solving support through data science and engineering in an effort to improve patient care and answer cutting-edge medical questions.

EDUCATION

- 2015 | 2013
● **M.S., Biomedical Engineering**
Drexel University
Philadelphia, PA
- 2015 | 2013
● **Graduate Certificate in Engineering Management**
Drexel University
Philadelphia, PA
- 2015 | 2010
● **B.S., Mechanical Engineering**
Drexel University
Philadelphia, PA
• Senior Design Project: [Automated Couette Flow Blood Viscometer](#)

EXPERIENCE

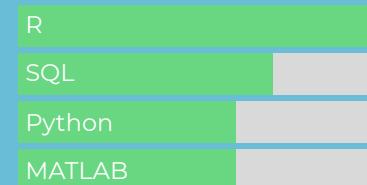
- Present | 2019
● **Data Analyst & Research Engineer**
[Children's Hospital of Philadelphia](#)
Philadelphia, PA
• Developed a full data pipeline for an international research collaborative
• Created data dashboards, reports, and tools to inform clinical decisions
• Led data-driven projects and team infrastructure using R, Python, & MATLAB
• Consulted with external institutions to supply database solutions
- 2019 | 2017
● **Research Project Engineer**
[Children's Hospital of Philadelphia](#)
Philadelphia, PA
• Minimized completion time for various tasks through automated solutions
• Analyzed patient waveforms and data streams from various medical devices
• Supervised data quality and integrity in database systems
• Developed a novel method for anterior/posterior pediatric chest geometry modeling
- 2017
● **Project Engineer**
[GS Medical USA](#)
King of Prussia, PA
• Led R&D life cycle of multiple spinal fixation system projects
• Served as the point of contact for surgeons and customers
• Conducted mechanical testing per ASTM and ISO standards for quality control
• Oversaw development of the Occipital-Cervical-Thoracic fixation system
- 2017 | 2015
● **Associate Project Engineer**
[GS Medical USA](#)
King of Prussia, PA
• Supported project leadership in design and development of spinal implant systems
• Consulted with international partners over production needs
• Observed surgical cases demonstrating company product use
- 2015 | 2014
● **Biomechanics Engineering Researcher**
[Children's Hospital of Philadelphia](#)
Philadelphia, PA
• Created a virtual surrogate model for child restraint system assessment
• Coauthored and presented publications on research findings
• Assessed occupant motion and injury kinematics using motion capture technology



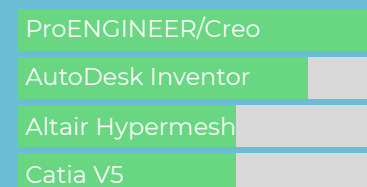
CONTACT

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LANGUAGE SKILLS



CAD AND FE SKILLS



BI SOFTWARE SKILLS

Tableau
Power BI

CERTIFICATIONS

FE/EIT Certified by NCEES
AHA Basic Life Support (BLS) Certified

Made in R using the [pagedown](#) package.
Last updated on 2021-06-14.



SELECTED PUBLICATIONS & POSTERS

- 2021 • **Effect of Amplitude Spectral Area on Termination of Fibrillation and Outcomes in Pediatric Cardiac Arrest**
[JAHA](#)
 • Tia T. Raymond, Sandeep V. Pandit, Heather Griffis, Xuemei Zhang, **Richard Hanna**, Dana E. Niles, Annemarie Silver, Javier J. Lasa, Sarah E. Haskell, Dianne L. Atkins, Vinay M. Nadkarni
- 2020 • **Pediatric cardiopulmonary resuscitation quality during intra-hospital transport.**
[Resuscitation](#)
 • Morgan Loaec, Adam S Himebauch, Todd J Kilbaugh, Robert A Berg, Kathryn Graham, **Richard Hanna**, Heather A Wolfe, Robert M Sutton, Ryan W Morgan
- 2019 • **Pediatric In-Hospital CPR Quality at Night and on Weekends**
[Resuscitation](#)
 • Ivie Esangbedo, Priscilla Yu, Tia Raymond, Dana E. Niles, **Richard Hanna**, Xuemei Zhang, Heather Wolfec, Heather Griffis, Vinay Nadkarnic for the Pediatric Resuscitation Quality (pediRES-Q) Collaborative Investigators
- 2018 • **Is CPR Quality Worse on Nights and Weekends in the Cardiac ICU?**
[PCICS](#)
 • Priscilla Yu, Ivie Esangbedo, Heather Griffis, **Richard Hanna**, Vinay Nadkarni, Dana E. Niles, Tia Raymond
- 2018 • **Cardiopulmonary Resuscitation in the Pediatric Emergency Department: Initial Findings from the Videography in Pediatric Emergency Research (VIPER) Collaborative**
[ReSS](#)
 • Karen J. O'Connell, Alexis B. Sandler, Matthew Leda, Benjamin T. Kerrey, Sage R. Myers, Mary Frey, Ichiro Watanabe, **Richard Hanna**, Aaron J. Donoghue
- 2015 • **Development of a Small Rear Facing Child Restraint System Virtual Surrogate to Evaluate CRS-to-Vehicle Interaction and Fitment**
[SAE](#)
 • Aditya Belwadi, **Richard Hanna**, Audrey Eagle, Daniel Martinez, Julie Kleinert, Eric Dahle



RELATED EXPERIENCE

- Present | 2018 • **CHOP R User Group Steering Committee Member**
[Children's Hospital of Philadelphia](#)
 • Led, organized, and participated in R user classes, group talks, and seminars to encourage education and collaboration throughout the enterprise
 • Assisted in teaching introductory R courses to new users throughout CHOP
 • Presented on R concepts including R Markdown, API workflows, and clinical reporting to drive effective cross-discipline communication
- Present | 2020 • **R 101 for Clinicians Teaching Assistant**
[Children's Hospital of Philadelphia](#)
 • Supported leadership in the CHOPR User Group and community in educating clinicians around the hospital on the fundamentals of R
 • Facilitated online learning and helped new users troubleshoot issues