Yahriel Salinas-Reyes | B.Sc. Aerospace Engineering
Research Data Scientist & Neural Systems Engineer, GEM Fellow
The GEM Consortium, Ph.D. Engineering and Science Fellowship

Polk: Des Moines, 50316, Iowa, United States

515-314-4160 • ✉ yahrielsreyes@gmail.com

//www.linkedin.com/in/yahriel-salinas-reyes-89ab38179

www.github.com/yahriels

Date: XX/XX/XXXX

Prof. [Professor/PI], [Research Topic/Laboratory, Department, University]
Inquiring about Open Research Positions (& Potential PhD Graduate Research Position) on your Laboratory Team

Dear Review/Hiring Committee,

I am writing to express my interest in the contract work related to (but not limited to) data science/engineering, analysis, automation, and digital solutions, as well as any operations related to imaging/mapping or IoT . With a B.Sc. in Aerospace Engineering and extensive experience in materials science and technology, I bring a diverse skill set that closely aligns with the requirements for the role. My background spans various areas of applied science and technology, transitioning to the Regulatory Science Affairs domain at Bayer R&D, where I gained experience in transferring regulatory efficacy data, assembling regulatory dossiers with bioinformatics and risk assessment data, and leveraging industry operational research techniques.

In addition to my technical training, I possess a plethora of applicable experience in scientific instrumentation troubleshooting, computational modeling, materials sciences, applied mathematics, numerical methods, nanoscience/technology, data science, electrical/industrial engineering, systems engineering, design of experiments (DOE), signals and control systems, statistics, machine learning, deep learning, neural networks, and software development/engineering. My computer skills include proficiency in programming languages such as Python, R, Linux, .NET, C, C++, C#, Java/JavaScript, HTML/CSS, MATLAB, SQL, GO, and AWS, as well as experience in full-stack development, IoT, PCB circuit design and analysis, CAD and FEA, ANSYS/ABAQUS, and machine/deep learning.

My experience as an Automation Engineer and Research Scientist has provided me with extensive knowledge in materials optimization techniques and chemical physics, including molecular characterization, computer vision system analysis, and operational research techniques for uncovering interfacial phenomena. Furthermore, my role as an Experimental Systems Engineer with DARPA allowed me to develop and execute complex PCB designs, circuit analysis, and operational research techniques, showcasing my ability to excel at problem-solving and troubleshooting skills.

Furthermore, my role as an Experimental Systems Engineer with DARPA allowed me to develop and execute complex PCB designs, circuit analysis, and operational research techniques. The project "Experimental Techniques for Flow Separation Detection and Chemical Sintering" involved designing hardware-software components and building signal processing circuit algorithms, showcasing my abilities in diagnostics and troubleshooting techniques for advanced systems.In addition to my technical expertise, I have a proven track record of collaborating effectively across teams to to communicate complex technical principles and deliver innovative solutions.

I am excited about the opportunity to bring my skills and passion for innovation to your team/organization in any capacity available. I am eager to discuss how my background in applied science and technology aligns with your organization's goals. Thank you for considering my application. Please feel free to contact me at (515) 314-4160 or yahrielsreyes@gmail.com to schedule a conversation.

Looking Forward to Hearing From You,

Yahriel Salinas-Reyes

Attached: curriculum vitæ

Yahriel Salinas-Reyes | B.Sc. Aerospace Engineering
Research Data Scientist & Neural Systems Engineer, GEM Fellow
The GEM Consortium, Ph.D. Engineering and Science Fellowship

Polk: Des Moines, 50316, Iowa, United States

☎ 515-314-4160 ● ✉ yahrielsreyes@gmail.com

✦ //www.linkedin.com/in/yahriel-salinas-reyes-89ab38179

✦ www.github.com/yahriels

Education

Iowa State University of Science & Technology   **Ames, IA**

Bachelor of Aerospace Engineering, GPA: 3.3   *2023*

Specialized in Nanoscience/materials, Computational & Mathematical Sciences, Theorerical Modeling & Experimental Verification

Career Overview

○ With a B.Sc. in Aerospace Engineering ('23), my research background spans diverse areas of applied science & technology. Transitioning to the Regulatory Science Affairs domain at Bayer R&D, I have gained extensive experience in transferring regulatory efficacy data, assembling regulatory dossiers with bioinformatics & risk assessment data, and leveraging industry operational research techniques. I possess a robust business acumen, delivering critical insights and recommendations for pipeline decisions, bridging the gap between scientific research and strategic business objectives.

Technical Skills

○ Programming: Python, R, Linux, .NET, C, C++, C#, Java/JavaScript, HTML/CSS, MATLAB, SQL, GO, AWS   ○ Other: Full-stack, IoT, PCB Circuit Design & Analysis, CAD & FEA, ANSYS/ABAQUS, Machine/Deep Learning

○ Tech Stack: Git, Databricks, Bash (Shell) Scripting, Snowflake, TypeScript, Docker (CI/CD Tools), Conda, Pycharm

Additional Technical Experience

Iowa State University of Science and Technology   **Aug 2019-May 2023**

(B.Tech / Information Technology Specialist & Full-stack Developer / IT Infrastructure and IoT

○ Responsible for implementation, monitoring, & maintenance of IT computer systems (cloud platforms, networks, IoT).

Boeing Undergraduate Research Excellence in Engineering Internship   **Dec 2020 - Dec 2021**

(B.Tech / Intern: Wind Energy and Harvesting / Mentor: Dr. Thomas Ward)

○ Intensive internship at Boeing, focused on wind energy harvesting, engineering instrumentation, & energy technology.

Fellowship Awards

Program	Institution/Board	Year
*GEM Ph.D. Fellowship** (Sci.&Eng.)	The National GEM Consortium: *Funding confirmed upon admission Ph.D. Program**	2024-2029*
Open/Study Research Award(Finalist)	The Fulbright X National Geographic Award: Bureau of Educational & Cultural Affairs	2024
ACCT Cert.(Order of The Engineer)	Engineering Accreditation Commission of ABET	2023
P.B.C. (McNair Scholars)	Ronald E. McNair Postbaccalaureate Achievement Program	2021-2023
Intern.(Boeing Research Fellowship)	Boeing: Undergraduate Research Excellence in Engineering Fellowship	2021-2022
S.F.P. (SURF Scholars)	Summer Undergraduate Research Fellowship at Stanford Univeristy('21) & Caltech('22)	2021-2022
P.B.C. (Research Certificate)	Louis Stokes Alliances for Minority Participation (LSAMP)	2019-2021

Work Experience

Bayer Crop Science, Seeds & Traits Safety: R & D Regulatory Science Toxicology Group   **St Louis, MO**

GEM Employer / Intern: Technology Development Center / Scientist I & Data Engineer*   *05/2024- Present*

○ Operate in Automation/Deep Learning & provide digital/software solutions aligned to cross-functional teams in agricultural science and biotechnology, specifically, the R&D Division of Regulatory Science & Affairs Team at Bayer.

- Responsible for full-stack development for Regulatory Affairs to consolidate GLP and transference of historical risk assessment data directly to global regulatory agencies before product launch.

DARPA: Recovering Rare-Earth Elements from E-Waste — **Ames, IA**
Research Assistant & Lab Technician, NSF Award No. 1757393 — *05/2022- 12/2023*

- Contributed to efforts in recycling at the point of disposal in direct development (phase I-III of R&D) of computer vision system, flow sensor technology, and experimental methods (validation) in rotating tank experiment to characterize mechano-chemical processes. Contributed to DARPA's mission to recover rare-earth elements from electronic waste.

The Microscale & Interfacial Fluid Physics Laboratory — **Ames, IA**
Experimental Systems & Automation Engineer — *08/2021- 12/2023*

- Demonstrated expertise in experimental systems and automation engineering, contributing to groundbreaking research in fluid mechanics/dynamics and interfacial phenomena. Focused on the PCB* design, development, and optimization of experimental apparatus and automation protocols, significantly enhancing research efficiency and data accuracy.

The Soft Matter Material Transport Group — **Ames, IA**
Undergraduate Researcher & Systems Engineer — *08/2019- 05/2022*

- Played a key role in the Soft Matter Material Transport Group's research initiatives, focusing on the design of experiments (DOE) and advanced development (phase II/III) of multi-functional piezoelectric devices for aeronautical applications and renewable energy. Statistical methods showcasing skills in systems engineering and materials science.

Caltech The Kavli Nanoscience Institute: The Julia R. Greer Group — **Pasadena, CA**
Undergraduate Research Assistant — *05/2022- 08/2022*

- Contributed to research efforts at Caltech's Kavli Nanoscience Institute, collaborating with the Julia R. Greer Group on the development of hybrid nanocomposites and the investigation of viscoelastic behavior, highlighting capabilities in nanomaterials synthesis and characterization. Tasked with mathematical modeling and experimental validation

Boeing: Wind Energy & Development — **Ames, IA**
Boeing Aerospace Research Fellow — *08/2021- 08/2022*

- Served as a Boeing Aerospace Research Fellow, spearheading projects in wind energy research and development, with a focus on characterizing damping mechanisms in piezoelectric wind-energy harvesters, demonstrating expertise in aerospace engineering and renewable energy technologies. Produced computational model for energy harvesting.

Stanford University: Xiaolin Zheng Z-Energy Group — **Stanford, CA**
Undergraduate Research Assistant — *05/2021- 08/2021*

- Engaged in research endeavors at Stanford University's Z-Energy Group, investigating the application of machine learning techniques in scientific methodologies and prediction, showcasing proficiency in data-enabled sciences, deep learning methods, and computational modeling in data-driven research. Contributed to scientific communications.

Iowa State University of Science & Technology — **Ames, IA**
Information Technology Specialist & Data Scientist — *08/2019- 05/2023*

- Provided technical expertise and operated in cross-functional teams with effective communication of controlled data, contributing to the implementation, monitoring, and maintenance of IT systems while leveraging data science techniques for analysis and decision-making. Gained experience in full-stack development & CS infrastructure systems.

Key Projects within Regulatory Science & Bioinformatics

1. *Risk Characterization of Toxicological, Risk Assessment, and Bioinformatic Data* — **May 2024 - Present**
GEM Fellow, Regulatory Science & Affairs: Toxicology / (Mentor: Dr. Kimberly Hodge-Bell) — *Bayer Crop Science*

- Analyzed and interpreted bioinformatic data to assess toxicological, hazardous, and nutritional risks.
- Ensured compliance with global regulatory safety guidance such as the European Food and Safety Agency (EFSA).
- Developed risk characterization models to predict potential safety concerns (toxicology, hazard ID, etc.).
- Collaborated cross-functionally with interdisciplinary teams from Biotech, Breeding & Genetics, Regulatory Affairs.
- *Keywords: Toxicology, Hazard Assessment, Nutritional Data, Regulatory Compliance, Bioinformatics*

2. *Automation of Procedural Systems and Experimental Bioinformatic Data* — **May 2024 - Present**
GEM Fellow / Crop Field Protection Digital Solutions Automation & Pipeline Design — *Bayer Crop Science*

- Implemented automation solutions for procedural data-management systems and generation of regulatory responses.
- Managed transference of toxicological information, hazardous exposure, and risk assessments from field tests & trials.
- Integrated data from internal & external studies to support regulatory responses to global regulatory agencies (EFSA).

- Enhanced efficiency and accuracy in historical data collection and processing of SECRET data in regulatory dossiers.
- *Keywords: Automation, Bioinformatic Data, Toxicological Information, Exposure Assessments, Data Integration*

3. *Data Mining and Automation Pipeline Design for Historical Regulatory Responses* **May 2024** - **Present**
GEM Fellow / R & D Regulatory Science Group Digital Solutions Automation & Pipeline Design   Bayer Crop Science

- Designed data mining and automation pipelines to ensure data integrity and compliance with global regulations.
- Analyzed historical regulatory response data for global scientific and food safety agencies (EFSA) for risk assessment.
- Developed archive data-basing systems (full-stack) to support the assembly of dossiers before product launch.
- Improved the accuracy and reliability of regulatory data submissions ensuring compliance with global guidelines.
- *Keywords: Data Mining, Automation, Data Integrity, Regulatory Responses, Pipeline Design*

4. *Development Operations (DevOps) for Historical Data Transfer and Compliance* **May 2024** - **Present**
GEM Fellow / Software & Data Engineering, Regulatory Macromolecular Toxicology Team   Bayer Crop Science

- Managed the transference of historical data related to search query data of regulatory responses and various versions.
- Ensured compliance with strict global guidelines and document version management using the RACI model (tasks/roles).
- Deployed searchable database software solution and implemented cybersecurity measures to protect controlled data.
- Developed AI tools (RAG Pipeline) to streamline document management processes to enhance efficiency and security.
- *Keywords: DevOps, Data Transfer, Compliance, Document Management, AI Tools, Cybersecurity*

Research and Development Projects

1. *Experimental Techniques: Flow Separation & Chemical Sintering* **August 2019** - **August 2023**
Prof: Dr. Martin Thuo, Dr. Thomas Ward / DARPA   Iowa State University of Science & Technology

- Developed hardware-software components and signal processing circuits for detecting flow instabilities in paper-based MEMS devices.
- Conducted experiments to manufacture MEMS nanocomposites and modeled shear viscosity.
- Aimed to simulate viscosity measurements at the thermal boundary for potential applications in aerospace.
- *Keywords: Systems Analysis, Interfacial Phenomena, Computational Modeling & Analysis, Navier Stokes Equations*

2. *Damping Mechanisms in Piezoelectric Wind-Energy Harvesters* **August 2021** - **August 2022**
Prof Dr. Thomas Ward Dept. of Aerospace Engineering, ISU   Research Fellow/Intern, Boeing Aerospace

- Designed experimental setups and measurement-calibration systems for piezoelectric wind-energy harvesters.
- Collaborated on solution algorithms and continuum mechanics of conductivity to optimize wind-tunnel experiments.
- Objective was to define thermodynamic properties for enhancing wind-energy harvesting efficiency.
- *Keywords: Aerodynamics Analysis, Harmonic Response, Computational Methods, Energy Storage, Soft Matter Physics*

3. *Energy Absoption in Nano-Architected Hybrid Composites* **May 2022** - **August 2022**
Prof: Dr. Julia R. Greer of Materials Science, A. Mechanics, & Medical Sciences Caltech, Kavli Nanoscience Institute

- Created nanocomposites with architectural features to enhance mechanical properties.
- Investigated deformation mechanisms using dynamic mechanical analysis and scanning electron microscopy.
- Developed a semi-empirical model to understand viscoelastic effects in hybrid nanocomposites.
- *Keywords: Nanoscience, Applied Mathematics, System Modeling, Continuum Mechanics, Energy Dissipation*

4. *Meta-stable Particles: Phase-change Materials and their Applications* **August 2019** - **May 2022**
Prof: Dr. Martin Thuo Dept. of Materials Science and Engineering, ISU   NSF-LSAMP, NSF Award No. 1757393

- Conducted research on meta-stable particles and their applications in phase-change materials.
- Collaborated on developing novel materials with unique properties for various industrial applications.
- Investigated the behavior of phase-change materials under different conditions for practical utilization
- *Keywords: Materials Science, Chemical Synthesis, Solid-State Physics, Advanced Materials, Applications*

Course Work

Key Courses   **August 2019**-**December 2023**
(Fundamentals and Formal Methods)   *Iowa State University: College of Engineering*

- **Courses**: Applied Mechanics & Physics, Materials Science & Engineering, Engineering & Polymeric Chemistry, Engineering Statistics, Machine-Learning/Data-Science, Finite Element Method, Bayesian Methods, Systems Engineering

- **Lab**: Numerical & Graphical Techniques, Advanced Computing/Programming, Advanced Data Structures & Algorithms

Online Courses

- **Deep Learning/CS:** *Digital System Testing & Testable Design, Theory & Applications of Data Structures and Algorithms* (May 2023), *Deep Learning with PyTorch* (Jan 2022), *Data Analysis with Python/AWS* (Oct 2021)
- **MathWorks/ML:** *Kernel Methods for Pattern Recognition & Analysis, Data Mining, Machine Learning with Matlab/Python (June 2023)*, *Machine Learning, TensorFlow & Computer Vision with Matlab/Python* (May 2022),

References

Reference I: Dr. Martin Thuo
Professor of Materials Science and Engineering
North Carolina State University
911 Partners Way, Room 3002
Engineering Building I Raleigh NC 27695-7907
Email: mthuo@ncsu.edu
Phone: (617)458-2363
Web:https://www.mse.ncsu.edu/thuo/

Reference II: Dr Thomas Ward
Professor of Mechanical and Aerospace Engineering
University of Virginia Engineering
Thornton Hall, 351
McCormick Road,
Charlottesville, VA 22904
Email: hgw8rs@virginia.edu
Phone: (434) 924-3072

Reference III: Dr. Lequetia Ancar
Director of Multicultural Student Success, Assistant Director of Engineering Student Services
Iowa State University of Science and Technology
1300 Marston
533 Morrill Rd.
Ames, IA 50011-2103
Email: lancar@iastate.edu
Phone: (515)294-0690

Reference IV: Dr. Julia R. Greer
Professor of Materials Science, Mechanics, and Medical California Institute of Technology Division of Engineering and Applied Science
The Kavli Nanoscience Institute at Caltech
1200 East California Boulevard
Pasadena, California 91125
Email: jrgreer@caltech.edu
Phone: (626) 395-4127
Web: https://www.jrgreer.caltech.edu/people/