

# Ambrosio Valencia-Romero

Engineer | Design Scientist | Systems Thinker

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## Professional Experience

- 09/22 -- NOW **Postdoc @ Engineering Research**  
*The Roux Institute at Northeastern University*  
 Portland, ME, United States
- Prepare research proposals and white papers
  - Systems thinking analysis of supply chain systems
  - Assess opportunities for Industry 4.0 in manufacturing
- 10/21 -- 08/22 **Postdoc @ The Design Research Collective**  
*Carnegie Mellon University, Mechanical Engineering*  
 Pittsburgh, PA, United States
- Interview construction industry stakeholders
  - Design thinking and user story mapping activities
  - Advise construction Owners, EPCs, and Suppliers teams
- 06/13 -- 07/14 **Research Engineer, Machinery and Propulsion**  
*COTECMAR (Sci. Tech. Corp. Naval, Marit. & River. Ind.)*  
 Cartagena de Indias, Bolívar, Colombia
- Design of naval piping systems for patrol vessels
  - Outfitting layout of engine and machinery rooms
  - Development of shipbuilding piping practices
- 08/12 -- 02/13 **Planning Intern, CAT® Certified Rebuild**  
*Relianz CAT (formerly GECOLSA Mining Division)*  
 Soledad, Atlántico, Colombia
- Prepare technical reports of rebuilds and major repairs
  - Support to planning and tracking of work orders
  - Support to tracking and inventory of spare parts

## Education

- 2021 **Ph.D. in Systems Engineering**  
*Strategy Dynamics in Collective Systems* [VIDEO]  
*Stevens Institute of Technology*
- 2016 **M.Sc. in Mechanical Engineering**  
*Quantified Gestalt Principles for 3D Product Aesthetics*  
*Universidad de Puerto Rico en Mayagüez*
- 2012 **B.Sc. in Mechanical Engineering**  
*Structural Design of Solar Tracking System*  
*Universidad del Atlántico*

## Awards

- 05/21 Stevens SSE Award for Distinguished Leadership by a Ph.D. Student, *Stevens Institute of Technology*
- 05/17 Scholarship for NSF 2017 ESD Research Summer School, *National Science Foundation; Clemson University.*
- 03/15 Best Graduate Research at the 8th NEA Science Day, *Northeast Alliance for Grad. Education & the Professoriate*

## Patents

- 04/2017 Safe Solar Tracking Software  
*Colombian Ministry of Interior, Registry #13-59-313.*

## Skills

### Analytical Skills

Agent-based modeling and game theory  
 Numerical analysis and optimization  
 Nonlinear mixed-effects models  
 Reinforcement learning

### Software Skills

Coding: Python, NetLogo, MATLAB, R Lang  
 CAD/CAE: SolidWorks, AutoCAD, Aveva  
 Graphics: Inkscape, PGF/TikZ, GIMP  
 Markup:  $\LaTeX$ , Markdown, HTML

### Soft Skills

Collaboration and teamwork  
 Flexibility and adaptability  
 Work ethic and integrity  
 Critical thinking

## Service

### Peer Reviewer

Intl. Conf. Design Theory & Methodology (DTM)  
 Computers & Information in Engineering (CIE)  
 Design Computing and Cognition (DCC)  
 Design Automation Conference (DAC)  
 Intl. Conf. on Design Education (DEC)

### Participation in Committees

- 05/18 -- NOW Broadening Participation of Underrepresented Groups  
*ASME Design Engineering Division*
- 04/18 -- 05/21 Graduate Student Academic Integrity Board  
*Stevens Institute of Technology*

### Mentoring Activities

- 01/22 -- 06/22 Diversity, Equity, and Inclusion Mentor  
*Carnegie Mellon University, College of Engineering*
- 08/20 -- 05/21 Doctoral Student Peer Mentor  
*Stevens Institute of Technology, Graduate Education*

## Additional Information

### Affiliations

- 02/16 -- NOW The Design Society
- 02/16 -- NOW American Society of Mechanical Engineers
- 01/22 -- NOW Encyclopedia of Integer Sequences (Contributor)

### Certifications and Training

- 02/23 -- 03/23 NSF I-Corps Spark Program  
*New England Regional Innovation Node at MIT*
- 08/22 -- 11/22 Cybersecurity 1.0  
*Correlation One*
- 04/15 -- 10/25 **Responsible Conduct, Social & Behavioral Research**  
*Collaborative Institutional Training Initiative*
- 04/19 -- 05/19 Science Communication Training, NYC Cohort  
*Science Riot/The Symposium: Academic Stand-up*

### Languages

English (fluent), Spanish (native).