



# Matias Cruz

## Senior Physicist

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### STRENGTHS

- 👥 **Cross-Disciplinary Collaboration**  
Successfully worked alongside engineering and clinical teams, gaining trust from colleagues in technical pursuits.
- 🔗 **Algorithm Development**  
Created transition pathways for prototype imaging codes that enabled efficient real-world implementation.
- 💬 **Technical Communication**  
Presented intricate research findings in clear concise terms, resonating well with diversified audiences.
- ✅ **Quality Assurance**  
Ensured rigorous testing phases that consistently evaluated data integrity and aligned outcomes with clinical standards.
- 💡 **Innovation Mindset**  
Propelled proactive ideas to advance imaging capabilities, contributing regularly to idea generation sessions and workshops.

### SKILLS

- CT Imaging
- Image Processing
- Algorithm Development
- C/C++
- Python
- MATLAB
- Project Management
- Technical Documentation
- Clinical Collaboration
- Data Analysis
- Prototype Implementation
- Signal Processing
- Image Reconstruction
- Healthcare Compliance

### SUMMARY

Passionate physicist with a Ph.D. in Medical Physics, recognized for over 5 years of experience in advancing CT imaging methodologies. Expertise includes developing state-of-the-art image reconstruction algorithms and a strong foundation in digital signal processing. Dedicated to enhancing diagnostic accuracy through innovative solutions and systematic research. Proven track record of successfully transitioning complex prototypes into reliable production systems while effectively managing cross-functional collaborations. Skills extend into maintaining meticulous documentation and delivering educational presentations that clarify technical concepts to diverse stakeholders.

### EXPERIENCE

#### Senior Physicist

Innovative Imaging Solutions Inc. 📅 June 2021 - Present 📍 Danvers, MA

Oversaw the design and execution of advanced image generation techniques ensuring innovative vision alignments with industry needs. Engaged collaboratively across teams for project success.

- Led design and implementation of novel CT imaging methods, significantly enhancing diagnostic capabilities.
- Developed robust C/C++ algorithms from MATLAB prototypes, streamlining image processing workflows.
- Strengthened distributed project management, coordinating efforts with various suppliers for system integration.
- Delivered well-structured technical reports that excited stakeholders and clarified scientific protocols.
- Conducted detailed algorithm testing initiatives, enabling continuous improvement that relied heavily on data-driven metrics.
- Evaluated and validated imaging approaches, guaranteeing compliance with current clinical standards.

#### Physicist

Diagnostic Imaging Corp. 📅 April 2018 - May 2021 📍 Springfield, IL

Applied analytical skills to improve existing imaging processes while collaborating closely with clinical staff to deliver effective solutions.

- Implemented data correction methodologies that improved image quality significantly during tests.
- Developed Python scripts and MATLAB routines meaningful enough to refine imaging analysis techniques.
- Responded to technical inquiries from clinical staff, providing essential support for varied imaging needs.
- Facilitated transitions of innovative algorithms into necessary clinical applications, merging empirical research with practical implementation.
- Reported and presented findings to enhance strategic product decisions aligning with organizational goals.
- Contributed vital insights towards interdepartmental collaboration aimed at improving imaging workflow efficiency.

#### Junior Physicist

Technical Imaging Solutions 📅 January 2016 - March 2018 📍 Evanston, IL

Supported seasoned physicists on imaging projects while proactively seeking opportunities for professional growth within the field.

- Assisted in algorithm development related to imaging modalities promoting enhanced data acquisition methods.

Data Corrections

Digital Signal Processing

## LANGUAGES

English Native

Spanish Proficient

## MY CAREER



- Senior Physicist at Innovative Imaging Solutions Inc. (5.2 Years)
- Physicist at Diagnostic Imaging Corp. (3.1 Years)
- Junior Physicist at Technical Imaging Solutions (2.2 Years)

- Collaborated effectively with engineering teams to ensure proper functionality of new imaging installations.
- Executed laboratory experiments assessing imaging performance while recording and analyzing yields results.
- Played an integral role in drafting user guides and documentation for advanced imaging software developed.
- Engaged with academic institutions via partnerships focusing on innovative imaging research topics.
- Prioritized ongoing education in the dynamic medical imaging sector assisting with workshops and symposiums.

## LEADERSHIP & AWARDS

- American Board of Radiology Certified Medical Physicist, 2022
- Distinction Award for Excellence in Research, University of Illinois, 2020

## EDUCATION

### Ph.D. in Medical Physics

University of Illinois at Chicago 🎓 GPA: 3.9 📅 2021 📍 Chicago, IL

**Coursework:** Radiological Physics, Applied Mathematics, Imaging Sciences, Biomedical Engineering

## CERTIFICATIONS

- Certified Medical Physicist 📅 2022
- Advanced Imaging Certification 📅 2023

## TECHNICAL SKILLS

- **Programming Languages:** C++, Python, MATLAB
- **Image Processing Software:** ImageJ, OsiriX, Siemens Syngo
- **Data Analysis Tools:** MATLAB, Python Pandas, NumPy
- **Simulation Software:** COMSOL, MATLAB Simulink, Unity
- **Documentation Platforms:** Markdown, Jupyter Notebooks, LaTeX
- **Project Management Tools:** Trello, Microsoft Project, Asana
- **Statistical Software:** SPSS, Minitab, R
- **Version Control Systems:** Git, GitHub, Bitbucket
- **Testing Frameworks:** pytest, unittest, boundary value analysis
- **Medical Regulatory Standards:** FDA Regulations, ISO 13485, ACR Guidelines

## PROFESSIONAL AFFILIATIONS

- Member, American Association of Physicists in Medicine (AAPM)
- Volunteer, Physics Outreach Program, University of Illinois

## ADDITIONAL INFORMATION

**Work Status** : Authorized to work in United States. No sponsorship required.

## REFERENCES

AVAILABLE ON REQUEST