

# Santiago Hernández Senosain

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## EDUCATION

**Instituto Tecnológico y de Estudios Superiores de Monterrey** – BSc Computer Science Aug. 2024-Present

- Relevant Coursework: Algorithms, Database Systems, Object-Oriented Programming.
- Achievements: Contributed to the redevelopment of MiTEC, enhancing user experience for over 50,000 students.

**The Edron Academy** – International Baccalaureate Diploma

July 2024

- Higher Level Subjects: Computer Science, Mathematics, Economics.

## PROFESSIONAL EXPERIENCE

**ITESM** – Undergraduate Researcher

Oct. 2025 – Present

- Supervised by Dr. Gerardo Ibarra Vázquez
- Conducting robustness evaluation of DCNNs under adversarial perturbations.
- Designing a hybrid CNN architecture that combines layers with evolutionary-optimized parameters and manually configured ones to improve robustness and generalization.

**ITESM** – Teaching Assistant

Aug. 2025 – Present

- Assisting in the Programming of Data Structures and Fundamental Algorithms course (TC1031).
- Designed programming assignments and exercises for ~90 students.
- Developed detailed solution sets to validate professor's assignments and ensure accurate student feedback.
- Created presentations to support lectures on core data structures and algorithms.

**Engen Captial** – Work Shadowing Experience

Nov. 2022 – Dec. 2022

- Gained hands-on experience with Agile software development, participating in sprint planning and iterative project delivery.
- Collaborated with a team of data scientists to clean and analyze financial datasets for high-profile clients, including Walmart.
- Developed a Spring Boot project using Spring Initializr and Kotlin, delivering scalable and maintainable backend solutions.

## EXTRACURRICULAR

**ITESM Competitive Programming Club** – Member

Aug. 2025 – Present

- Attending regular problem-solving sessions focused on algorithms, data structures, and competitive programming techniques.
- Collaborating with a 3-member team to prepare for national and international competitions, including the International Collegiate Programming Contest (ICPC).

## RESEARCH PROJECTS

**RSA Encryption** | *Number Theory, Algebraic Structures, Cybersecurity*

Mar. 2024

- Conducted in-depth research on the security of RSA encryption, identifying potential vulnerabilities in its implementation.
- Utilized group theory to analyze the algebraic structure of the cryptosystem, devising a theoretical approach to derive private keys from public keys.
- Authored a paper on the findings, which received the highest possible grade (7) for IB coursework.

**National Hockey League Modeling** | *Mathematical Modeling, Large-scale Data Analysis*

Oct. 2023

- Developed a mathematical model to predict winning teams in National Hockey League (NHL) matchups, based on the Bradley-Terry model.
- Enhanced predictions by implementing exponentially weighted moving averages (EWMA) to account for recent performance trends.

## SKILLS & INTERESTS

**Languages:** English and Spanish (fluent in both)

**Software:** C++, Python, JavaScript, SQL, Bash | Git, Node.js, MATLAB, AWS | Unix Environment

**Interests:** Cybersecurity, Software Development, Computational Modeling, Data Science, Number Theory