

# LEMUEL GAVIN G. SARET

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## STATEMENT

I am currently a graduate student in the National Institute of Physics, University of the Philippines, Diliman, and a member of the Gravity Group led by Dr. Ian Vega. As an undergrad, I spent several years studying the properties of the Alcubierre warp drive, its effects to its immediate vicinity, and the deflection it causes to incoming photons. I wrote my undergraduate thesis and several conference proceedings papers based on this work. As a Master's student, I am focused on gravitational wave physics, particularly the dynamics of extreme-mass-ratio-inspirals.

## EDUCATION

### 2020 - Present

#### **Master of Science, Physics**

University of the Philippines, Diliman, Quezon City, Philippines  
University Scholar, GWA 1.00-1.45 (AY 2020-2021 1st sem and 2nd Sem)

### 2015 - 2020

#### **Bachelor of Science, Physics**

University of the Philippines, Diliman, Quezon City, Philippines  
College Scholar, GWA 1.45-1.75 (AY 2015-2016 1st sem and AY 2018-2019 2nd Sem)  
Thesis: Photon scattering by an Alcubierre warp-drive space-time

### 2011 - 2015

#### **High School**

Manila Science High School, Taft avenue, corner Padre Faura St., Ermita, Manila  
Best in Mathematics award

## PUBLICATIONS

### 2020

L. G. G. Saret and I. Vega, Michael Francis Ian G., Photon scattering by an alcubierre warp drive, in Proceedings of the 38th International Physics Conference of Samahang Pisika ng Pilipinas(2020), SPP-2020-5A-09

### 2021

L. G. G. Saret and I. Vega, Michael Francis Ian G., Energy shifts of photons crossing an Alcubierre warp drive, in Proceedings of the 39th International Physics Conference of Samahang Pisika ng Pilipinas (2021),SPP-2021-PC-09

## CONFERENCES AND WORKSHOPS

### 2019

#### **YITP Asian-Pacific Winter School and Workshop on Gravitation and Cosmology**

Yukawa Institute of Theoretical Physics (YITP), Kyoto, Japan. February 11-15, 2019.

### 2019

#### **37th International Physics Conference of Samahang Pisika ng Pilipinas**

Tagbilaran, Bohol. May 29 - June 1, 2019.

### 2019

#### **1st Gravity Group Workshop**

Gravity Group, National Institute of Physics, University of the Philippines, Diliman, June 2019. Participated in a week-long workshop comprised of lectures and coding of General Relativity topics.

### 2020

#### **2nd Gravity Group Workshop**

Held online last August 10 - 14, 17 - 21, 2020 . Organized and participated a two-week workshop comprised of lectures and coding of General relativity topics.

### 2020

#### **38th International Physics Conference of Samahang Pisika ng Pilipinas**

Held online last October 19 - 23, 2020. Presented and participated in the conference.

### 2021

#### **39th International Physics Conference of Samahang Pisika ng Pilipinas**

Held online last October 20 - 22, 2021. Presented and participated in the conference.

### 2021

#### **Black Holes Inside and Out Conference**

Held online last September 27 - October 1, 2021.

## ACHIEVEMENTS AND AWARDS

2014	<b>Bronze Award, International Mathematics Competition</b> Held in Singapore last August 2014
2015	<b>3rd Place, International Regions Mathematics League</b> Held in University of Nevada, Las Vegas last May - June 2015
2018	<b>Bronze medal, International Theoretical Physics Olympiad</b>
2018	<b>Accomplished Competitor, University Physics Competition</b>
2015 - 2020	<b>Merit Scholar under the Department of Science and Technology (DOST)</b>
2020 - present	<b>Accelerated Science and Technology Human Resource Development Program (ASTHRDP) Scholar under the Department of Science and Technology (DOST)</b>

## TEACHING EXPERIENCE

2019	<b>Summer Science Internship Program (SSIP)</b> Served as a mentor for incoming senior high school students of the Philippine Science High School. Taught topics on Physics and Mathematics and helped develop their own research project.
2016 -2020	<b>Volunteer tutor for the UP Physics Association (UPPA)</b> Taught Elementary and Fundamental Physics to non - Physics majors.
2020 - present	<b>Mentor for Asian MathSci League, Inc.</b> Taught competitive math to elementary and high school students and proctored local and international competitions.
2021	<b>Coach of Philippine Team, International Regions Mathematics League</b> Facilitated an intensive two-week training program and proctored the competition online.

## OTHER WORK EXPERIENCE

2017 - 2019	<b>Service Council Member, Christ's Youth in Action (CYA)</b> Organized university-wide events and outreaches, and mentored groups of students.
2017 -2018	<b>Vice - president for External Affairs, UP Physics Association (UPPA)</b>
2019 - 2020	Handled the organization's sponsorships and partnerships on top of organizing college - wide and university - wide events.

## AFFILIATIONS

<b>Gravity Group, National Institute of Physics</b> Graduate Student - Researcher Research Interests: Compact Objects, Dynamics of Extreme - Mass - Ratio - Inspirals	<b>Christ's Youth in Action (CYA)</b> Alumnus
<b>UP Physics Association (UPPA)</b> Alumnus	<b>Swimming Enthusiast's Association (SEA UP)</b> Alumnus

## SKILLS AND PROFICIENCY

<b>Strong Physics Core</b>	Classical Mechanics, Electrodynamics, Quantum Mechanics, Statistical Mechanics, Mathematical Physics, General Relativity, Astrophysics.
<b>Programming Language</b>	Mathematica, Python
<b>Tools</b>	LATEX, Git, AutoCAD, Canva, Photoshop
<b>Other Skills</b>	Oral communication, Writing, Microsoft Office, Google Suite
<b>Languages</b>	Proficient in English and Filipino