**Bruno Henrique Dourado Macedo**Address to access this CV: <https://lattes.cnpq.br/7842985016416991>

Last updated 18/08/2023

Resumo informado pelo autor

Pursuing a bachelor's degree in Physics Engineering at the Federal University of Latin American Integration (UNILA), I have steered my academic journey towards exploring interdisciplinary subjects and acquiring a wide range of skills. My quest for knowledge spans diverse areas. I participated in the course "Machine Learning Foundations: A Case Study Approach" at the University of Washington, USA, and completed the course "Introduction to Computer Science with Python Part 1" at the Institute of Advanced Studies - USP, Brazil. Additionally, I possess skills in languages like C, PHP, and Java, and actively participated in web development projects. My passion for research is evident in projects like "Exoplanet Identification using Machine Learning Techniques" and "Automatic Exoplanet Detection using Machine Learning Algorithms." My commitment to applying advanced analytical methods in space exploration and seeking new knowledge is unwavering. Furthermore, I had the privilege of serving as a teaching assistant in the subjects "Calculus 1" and "Financial Mathematics" in the semester of 2020.1, and in the "Basic Mathematics Teaching Project" in the semester of 2020.2, sharing my knowledge and supporting my fellow students. In the semester of 2023.1, I am also providing teaching assistance in General Physics for Biology. I highlight the achievement of winning the Best Extension Project award from CREA-PR in 2023, for the project "Electrochemistry is Within Your Reach," developed in collaboration with Renata Olmedo Benedet. I also received an honorable mention in 2022, both in this project and in my Scientific Initiation, where I dedicated myself to Machine Learning research for exoplanet detection using NASA data. Currently, my dedication is focused on relevant projects. I am a member of the research group "Data Mining in Time Series" at UNILA, and I participate in projects such as "Influence of Wavelength during Photochemical Synthesis on the Morphology and Physical Properties of Silver Nanoparticles," "Exoplanet Identification using Machine Learning Techniques," and "Automatic Processing of Light Curves for Exoplanet Identification." Committed to expanding horizons and making significant contributions to science and technology, I continue my journey with enthusiasm, seeking to face challenges and apply my knowledge in an impactful manner. Additionally, I served as the president of the Academic Center of Physics Engineering (CAENFIS) in the years 2022-2023, and I was vice-president in the years 2021-2022.

(Text informed by the author)**Civil name****Full name** Bruno Henrique Dourado Macedo**Personal Information****Name used in Bibliographic Citations** MACEDO, B. H. D.; BRUNO H. D. MACEDO**Gender** male**Cor ou Raça** Parda**Parental information** ZENILSON DE MACEDO and ERONILDA DOS SANTOS DOURADO MACEDO**Birth information** 19/08/1993 - IBITIARA/BA - Brazil**Identification document** 584294864 SSP - SP - 12/03/2014**CPF Number** 062.632.685-06**Residential Address** Avenida das Nações, 903
Centro - Santa Terezinha de Itaipu
85875000, PR - Brazil
Phone number: 77 36472267
Celular 45 999976897
Personal URL: www.iciencia.info/portal**Professional Address** Universidade Federal da Integração Latino-Americana, INSTITUTO LATINO-AMERICANO DE CIÊNCIAS DA VIDA E DA NATUREZA
AC Parque Tecnológico Itaipu
Conjunto B - Foz do Iguaçu
85867970, PR - Brazil
Phone number: 45 98369843**e-Mail** contact e-mail : brunohenriquedourado@gmail.com
alternative e-mail : bhd.macedo.2017@aluno.unila.edu.br**Formal Education**

- 2020** Graduation in Engenharia Física.
Universidade Federal da Integração Latino-Americana, UNILA, Foz Do Iguaçu, Brazil
- Graduation incomplete in Ciências da Computação.
FAM CENTRO UNIVERSITARIO, FAM, Sao Paulo, Brazil
Year of interruption: 2016
- Graduation incomplete in .
Centro Universitário das Faculdades Metropolitanas Unidas, FMU, Sao Paulo, Brazil
Year of interruption: 2014

Complementary Education

- 2022 - 2023** Short Term Course in Machine Learning Foundations: A Case Study Approach. (Carga horária: 18h).
University of Washington, WASHINGTON, Seattle, United States
Keywords: Machine Learning, Machine Learning Foundations: A Case Study Approach, University of Washington, Machine Learning: Regression, Machine Learning: Clustering & Retrieval, Machine Learning: Classification
- 2022 - 2023** Continuing Education in Centro Acadêmico de Engenharia Física (CAENFIS). (Carga horária: 30h).
Universidade Federal da Integração Latino-Americana, UNILA, Foz Do Iguaçu, Brazil
Keywords: Centro Acadêmico do curso de Engenharia Física (C, CAENFIS, Engenharia Física, UNILA

2021 - 2022	Short Term Course in Introdução à Ciência da Computação com Python Parte 1. (Carga horária: 42h). Instituto de Estudos Avançados - USP, IEA-USP, Sao Paulo, Brazil <i>Keywords: Introdução à Ciência da Computação com Python, Ciência da Computação, Python</i>
2021 - 2022	Continuing Education in Centro Acadêmico de Engenharia Física (CAENFIS). (Carga horária: 30h). Universidade Federal da Integração Latino-Americana, UNILA, Foz Do Iguaçu, Brazil <i>Keywords: CAENFIS, Engenharia Física, UNILA, Centro Acadêmico de Engenharia Física</i>
2020 - 2020	Short Term Course in Curso Completo de PHP 7. (Carga horária: 33h). Udemy, UDEMY, United States <i>Keywords: PHP 7 , Banco de Dados, Linguagem de programação PHP 7, Programação WEB PHP</i>
2020 - 2020	Short Term Course in Aprenda a programar em Java do zero. (Carga horária: 3h). Udemy, UDEMY, United States <i>Keywords: Banco de Dados, Java, Programação Java, Linguagem de programação Java</i>
2020 - 2020	Short Term Course in Aprenda Linguagem C - Fundamentos Para Lógica de Programação. (Carga horária: 2h). Udemy, UDEMY, United States
2019 - 2020	Short Term Course in Curso Desenvolvedor Web Completo + 10 de projetos.. (Carga horária: 47h). Udemy, UDEMY, United States
2018 - 2019	Short Term Course in Algèbre Linéaire (Partie 1). (Carga horária: 128h). edX, EDX, United States
2018 - 2019	Short Term Course in R Basics - R Programming Language Introduction. (Carga horária: 4h). Udemy, UDEMY, United States
2017 - 2017	Short Term Course in Cálculo - Limites. (Carga horária: 3h). Udemy, UDEMY, United States
2012 - 2014	Short Term Course in Computação Gráfica. (Carga horária: 384h). School of Art, Game and Animation, SAGA, Brazil
2012 - 2014	Short Term Course in Administração. (Carga horária: 384h). instituto Profissionalizante Paulista, IPP, Brazil
2010 - 2010	Short Term Course in Técnico em Informática. (Carga horária: 192h). MDY - CLC Informatica, MDY - CLC, Brazil

Professional Experience

1. Hospital São Camilo - Pompéia - HSC/Pompéia

Contract institutional

2015 - 2016	Contract: Mensageiro Hospitalar , Position: Mensageiro Hospitalar , Working hours (weekly): 48, Schemes of job: Full-time
2014 - 2015	Contract: Auxiliar Administrativo , Position: Auxiliar Administrativo , Working hours (weekly): 48, Schemes of job: Full-time

2. Fundação Oswaldo Ramos - FOR

Contract institutional

2012 - 2013	Contract: Jovem Aprendiz , Position: Jovem Aprendiz , Working hours (weekly): 24, Schemes of job: Part-time
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3. Drogaria São Paulo - GRUPO DPSP

Contract institutional

2013 - 2013	Contract: Atendente de Loja , Position: Atendente de Loja , Working hours (weekly): 44, Schemes of job: Full-time
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4. Supermercados Atacadão - ATACADÃO

Contract institutional

2018 - 2019	Contract: Atendente de Loja , Position: Atendente de Loja , Working hours (weekly): 44, Schemes of job: Full-time
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Projects

Projotos de pesquisa

2022 - Current Identification of Exoplanets using Machine Learning Techniques

Description: The analysis of temporal behavior is a task of growing interest in several areas of knowledge, such as economics (daily stock prices, monthly unemployment rate, industrial production), medicine (electrocardiogram, electroencephalogram), epidemiology (monthly number of new cases of meningitis), meteorology (rainfall, daily temperature, wind speed). The continuous collection of information over time has contributed to the emergence of databases with large volumes of sequential information, which makes their interpretation difficult by humans. When data is collected over time, it can be represented as a time series. The use of analysis methods for the study of events contained in the time series is a non-trivial task that depends on the application domain. In this scenario, approaches based on data mining methods have been widely explored for time series analysis. In this context, this project aims to develop techniques and methods for the intelligent analysis of time series data through pre-processing tasks, similarity measures and machine learning algorithms.

Status: In progress Category: Projetos de pesquisa

Students: Undergraduate (1); Especialização (2); Master’s (2); Ph.D. (2);

Members: Bruno Henrique Dourado Macedo; JOYLAN NUNES MACIEL; BRUNO CÉSAR RIBAS; EDUARDO SANT’ANA DA SILVA; MARCELO NEPOMOCENO KAPP; RAZER ANTHOM NIZER ROJAS MONTANO; Willian Zalewski (Responsable)Funding Institution: Fundação Araucária de Apoio ao Desenvolvimento Científico e Tecnológico-FAADCT/PR

2021 - 2022 Automatic Detection of Exoplanets Using Machine Learning Algorithms

Description: The analysis of temporal behavior is a task of growing interest in several areas of knowledge, such as economics (daily stock prices, monthly unemployment rate, industrial production), medicine (electrocardiogram, electroencephalogram), epidemiology (monthly number of new cases of meningitis), meteorology (rainfall, daily temperature, wind speed). The continuous collection of information over time has contributed to the emergence of databases with large volumes of sequential information, which makes their interpretation difficult by humans. When data is collected over time, it can be represented as a time series. The use of analysis methods for the study of events contained in the time series is a non-trivial task

that depends on the application domain. In this scenario, approaches based on data mining methods have been widely explored for time series analysis. In this context, this project aims to develop techniques and methods for the intelligent analysis of time series data through pre-processing tasks, similarity measures and machine learning algorithms.

Status: Finished Category: Projetos de pesquisa

Students: Undergraduate (1); Ph.D. (2);

Members: Bruno Henrique Dourado Macedo; JOYLAN NUNES MACIEL; Willian Zalewski

(Responsible)Number of S&T productions: 2/

Projeto de extensão

- 2022 - 2023** Influence of wavelength during photochemical synthesis on morphology and physical properties of silver nanoparticles.
- Description: Spherical noble metal nanoparticles have a range of applicability due to the dipolar plasmon resonance being in the visible region. The characteristics of this electronic oscillation can be shaped according to the morphology of the nanoparticle. The project aims to sinter silver nanoparticles with different sizes and shapes through photochemical reduction. These particles will be characterized by XRD, TEM, DLS, FTIR, UV-Vis-NIR and refractometer. The obtained behaviors will be used to feed the simulation by FEM, in order to compare experimental results related to heat transport and extrapolation of application of these systems. The samples will finally be applied in prototypes of hybrid solar collectors.
- Status: Finished Category: Projeto de extensão
- Students: Undergraduate (1);
- Members: Bruno Henrique Dourado Macedo; VINICIUS MARIANI LENART (Responsible)
- 2021 - 2022** ELECTROCHEMISTRY IS IN YOUR HANDS
- Description: Federal universities in Brazil offer many opportunities to students who finish high school courses and who enter. However, most of these students from public and private schools do not know what a University is, much less what they can offer. In this sense, this project aims to bring the university closer to the schools. UNILA's undergraduate courses will be publicized by scholarship students and extension volunteers. Experiments will also be carried out in the area of chemistry, specifically electrochemistry. It will thus stimulate interest in nanomaterial technology and its deepening in undergraduate courses. With this, it is intended to achieve, through didactic teaching, the functioning of batteries to students, establishing everyday relationships, phenomena and concepts involved in electrochemical reactions and environmental problems.
- Status: Finished Category: Projeto de extensão
- Students: Undergraduate (4); Ph.D. (1);
- Members: Bruno Henrique Dourado Macedo; Jose Ricardo Cezar Salgado (Responsible); Jeniffer Ayana De Souza Pires; Willian Rupolo; Renata Olmedo BeneditFunding Institution: Fundação Araucária de Apoio ao Desenvolvimento Científico e Tecnológico-FAADCT/PR
- Number of S&T productions: 2/

Languages

English	Understanding Functional , Speaking Functional , Writing Functional , Reading Functional
Español	Understanding Functional , Speaking Functional , Writing Functional , Reading Functional
Portuguese	Understanding Fluent , Speaking Fluent , Writing Fluent , Reading Fluent


Awards

- 2023** Melhores Projetos de Extensão Universitária - A Eletroquímica ao alcance da sociedade, CREA-PR
- 2022** Menção Honrosa - A Eletroquímica Ao Alcance de Toda a Sociedade, SIEPE 2022 UNILA
- 2022** Menção Honrosa - Detecção Automática de Exoplanetas utilizando Algoritmos de Aprendizado de Máquina, SIEPE 2022 UNILA



S, T & A Production

Bibliographic Production

Articles published in annals of events (summary)


1.  **MACEDO, B. H. D.; SALGADO, J. R. C.; BENEDET, R. O.**. 2022. 4th Integrated Teaching, Research and Extension Week In 4ª *Semana Integrada de Ensino, Pesquisa e Extensão* 4ª Semana Integrada de Ensino, Pesquisa e Extensão Foz do Iguaçu 2022 4 413-414 Foz do Iguaçu: EDUNILA – Editora Universitária da UNILA
Keywords: *eletroquímica, Educação, Engenharia Física, Química, SIEPE UNILA*
Knowledge areas: *Físico-Química, Eletroquímica, Meio Ambiente*
Additional references: *Brasil/Portuguese. Meio de divulgação: Outro. Home page: [https://portal.unila.edu.br/eventos/siepe-2022/anaais]*
2. **MACEDO, B. H. D.; ZALEWSKI, W.**. 2022. 4th Integrated Teaching, Research and Extension Week In 4ª *Semana Integrada de Ensino, Pesquisa e Extensão* 4ª Semana Integrada de Ensino, Pesquisa e Extensão Foz do Iguaçu 2022 4 54-55 Foz do Iguaçu: EDUNILA – Editora Universitária da UNILA
Keywords: *Ciência da Computação, Engenharia Física, Exoplanetas, Física, Machine Learning*
Knowledge areas: *MACHINE LEARNING, Exoplanetas, Exoplanetas*
Additional references: *Brasil/Portuguese. Meio de divulgação: Outro. Home page: [https://portal.unila.edu.br/eventos/siepe-2022/anaais]*

Presentations in Events

1.  **MACEDO, B. H. D.; SALGADO, J. R. C.; BENEDET, R. O.** *A Eletroquímica Está Em Suas Mãos*. 2022. (Seminar, Presentations in Events)
Keywords: *eletroquímica, Educação, Química, Física, SIEPE, SIEPE UNILA*
Knowledge areas: *Education, Physics, Chemistry*
Additional references: *Brasil/Portuguese. . Home page: https://portal.unila.edu.br/eventos/siepe-2022; Local: JU; Cidade: Foz do Iguaçu - Brasil; Evento: SEMANA INTEGRADA DE ENSINO, PESQUISA E EXTENSÃO; Inst.promotora/financiadora: Universidade Federal da Integração Latino-Americana*
2.  **MACEDO, B. H. D.; ZALEWSKI, W.** *Detecção Automática de Exoplanetas utilizando Algoritmos de Aprendizado de Máquina*. 2022. (Seminar, Presentations in Events)
Keywords: *Machine Learning: Classification, Machine Learning, Exoplanetas, SIEPE*
Knowledge areas: *Programação, MACHINE LEARNING, Exoplanetas*
Additional references: *Brasil/Portuguese. . Home page: https://portal.unila.edu.br/eventos/siepe-2022; Local: JU; Cidade: Foz do Iguaçu - Brasil; Evento: SEMANA INTEGRADA DE ENSINO, PESQUISA E EXTENSÃO; Inst.promotora/financiadora: Universidade Federal da Integração Latino-Americana*

Educação e Popularização de C&T

Articles published in annals of events (summary)

1.  **MACEDO, B. H. D.; SALGADO, J. R. C.; BENEDET, R. O.**. 2022. 4th Integrated Teaching, Research and Extension Week In 4ª *Semana Integrada de Ensino, Pesquisa e Extensão* 4ª Semana Integrada de Ensino, Pesquisa e Extensão Foz do Iguaçu 2022 4 413-414 Foz do Iguaçu: EDUNILA – Editora Universitária da UNILA

Keywords: eletroquímica, Educação, Engenharia Física, Química, SIEPE UNILA
Knowledge areas: Físico-Química, Eletroquímica, Meio Ambiente
Additional references: Brasil/Portuguese. Meio de divulgação: Outro. Home page:
[https://portal.unila.edu.br/eventos/siepe-2022/anaís]

2. MACEDO, B. H. D.; ZALEWSKI, W. 2022.
4th Integrated Teaching, Research and Extension Week In 4ª Semana Integrada de Ensino, Pesquisa e Extensão 4ª Semana Integrada de Ensino, Pesquisa e Extensão Foz do Iguaçu 2022 4 54-55 Foz do Iguaçu: EDUNILA – Editora Universitária da UNILA
Keywords: Ciência da Computação, Engenharia Física, Exoplanetas, Física, Machine Learning
Knowledge areas: MACHINE LEARNING, Exoplanetas, Exoplanetas
Additional references: Brasil/Portuguese. Meio de divulgação: Outro. Home page:
[https://portal.unila.edu.br/eventos/siepe-2022/anaís]

Presentations in Events

1. 🌟 MACEDO, B. H. D.; SALGADO, J. R. C.; BENEDET, R. O. A Eletroquímica Está Em Suas Mãos. 2022.
(Seminar, Presentations in Events)
Keywords: eletroquímica, Educação, Química, Física, SIEPE, SIEPE UNILA
Knowledge areas: Education, Physics, Chemistry
Additional references: Brasil/Portuguese. . Home page: https://portal.unila.edu.br/eventos/siepe-2022;
Local: JU; Cidade: Foz do Iguaçu - Brasil; Evento: SEMANA INTEGRADA DE ENSINO, PESQUISA E EXTENSÃO; Inst.promotora/financiadora: Universidade Federal da Integração Latino-Americana
2. 🌟 MACEDO, B. H. D.; ZALEWSKI, W. Detecção Automática de Exoplanetas utilizando Algoritmos de Aprendizagem de Máquina. 2022.
(Seminar, Presentations in Events)
Keywords: Machine Learning: Classification, Machine Learning, Exoplanetas, SIEPE
Knowledge areas: Programação, MACHINE LEARNING, Exoplanetas
Additional references: Brasil/Portuguese. . Home page: https://portal.unila.edu.br/eventos/siepe-2022;
Local: JU; Cidade: Foz do Iguaçu - Brasil; Evento: SEMANA INTEGRADA DE ENSINO, PESQUISA E EXTENSÃO; Inst.promotora/financiadora: Universidade Federal da Integração Latino-Americana

Participação em eventos, congressos, exposições, feiras e olimpíadas

1. Apresentação Oral in SEMANA INTEGRADA DE ENSINO, PESQUISA E EXTENSÃO. 2022. (Seminar)
Automatic Detection of Exoplanets Using Machine Learning Algorithms.

Eventos

Eventos

Participation In Events

1. Apresentação Oral in SEMANA INTEGRADA DE ENSINO, PESQUISA E EXTENSÃO. 2022. (Seminar)
Automatic Detection of Exoplanets Using Machine Learning Algorithms.
2. Apresentação Oral in SEMANA INTEGRADA DE ENSINO, PESQUISA E EXTENSÃO. 2022. (Seminar)
ELECTROCHEMISTRY IS IN YOUR HANDS.

Total of Production

Bibliographic Production

Articles published in annals of events	2
Presentations in Events (Seminar)	2

Technical Production

Radio or TV Show (other)	1
Rede Social	1
Site	1

Events

Participation in events (congress)	3
Participation in events (seminar)	4
Participation in events (workshop)	1

Other Relevant Information

- 1 Trabalho Voluntário na mostra de curso Engenharia Física - 4 Semana Integrada de Ensino, Pesquisa e Extensão (SIEPE) da Universidade Federal da Integração Latino-Americana (UNILA) 2022. Trabalho Voluntário como (Presidente) Centro Acadêmico de Engenharia Física (CAENFIS) da Universidade Federal da Integração Latino-Americana (UNILA) 2022-2023. Trabalho Voluntário como (Vice-Presidente) Centro Acadêmico de Engenharia Física (CAENFIS) da Universidade Federal da Integração Latino-Americana (UNILA) 2021-2022.