Temas de Investigación

INDICACIONES

- Cada grupo, seleccionará un área de su interés (*procesamiento de imágenes*, *criptografía*, *cálculo numérico*, ……)
- **Cada alumno** seleccionará 2 artículos (diferentes de los integrantes de su grupo) del área de interés, para ser estudiados y analizados. Se realizará la evaluación correspondiente.
- **Cada grupo** presentará al final del curso un artículo de un tema de investigación correspondiente al area de interes seleccionado. El articulo debe describir la solución de un problema del area de interes, en modo serial y paralelo.

PROCESAMIENTO DE IMÁGENES

Understanding Digital Image Processing
https://api.pageplace.de/preview/DT0400.9781351342674_A35217382/preview-9781351342674_A35217382.pdf

A Software System for Processing Images with Parallel Computing
https://www.researchgate.net/publication/347378678_A_Software_System_for_Processing_Images_with_Parallel_Computing

Implications of Parallel Computing in the Optimization of Digital Image Processing Algorithms
http://www.ace.upg-ploiesti.ro/membri/gradulescu/Vasilescu_Radulescu_Sibiu_2008.pdf

Exploring Distributed and Parallel Image Processing Analytically
http://www.ijlera.com/papers/v9-i6/1.202406680.pdf

Performance Analysis of Image Segmentation Using Parallel Processing
https://www.ijircst.org/DOC/14_performance_analysis_of_image_segmentation_using_parallel_processing.pdf

Parallel Computing for Real-Time Image Processing
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4912417

Large Scale Image Processing Using Distributed and Parallel Architecture

https://www.ijcsit.com/docs/Volume%206/vol6issue06/ijcsit20150606149.pdf

Analysis Of Digital Image Processing With Parallel and Overlap Segment Technique
https://www.ijert.org/research/analysis-of-digital-image-processing-with-parallel-and-overlap-segment-technique-IJERTV2IS60490.pdf

Parallel Image Processing in Heterogeneous Computing Network Systems
https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=45de957dcc106d435f736599ee656a385aa22555

MPI Casestudy: Parallel Image Processing
http://www.archer.ac.uk/training/course-material/2018/07/mpi-epcc/exercises/MPP-casestudy.pdf

Parallel Image Processing Techniques, Benefits and Limitations
https://www.maxwellsci.com/announce/RJASET/12-223-238.pdf
https://www.researchgate.net/publication/297629054_Parallel_Image_Processing_Techniques_Benefits_and_Limitations

Image Processing Application Using Parallel Computing
https://www.ijsr.net/archive/v5i8/ART20161346.pdf

Parallel Computing in Digital Image Processing
https://ijarcce.com/wp-content/uploads/2015/02/IJARCCE3I.pdf

Digital image processing using parallel computing based on CUDA technology
https://iopscience.iop.org/article/10.1088/1742-6596/803/1/012152/pdf

Point to Point Processing of Digital Images using Parallel Computing
https://www.researchgate.net/publication/267405802_Point_to_point_processing_of_digital_images_using_parallel_computing

Parallel Image Processing Applications on a Network of Workstations
https://home.cse.ust.hk/~hamdi/Publications_pdf/Parallel%20Image%20Processing%20Applications%20%20%20on%20a%20Network%20of%20Workstations.pdf

CRIPTOGRAFIA

Parallel Algorithms for Integer Factorisation
https://maths-people.anu.edu.au/~brent/pd/rpb115.pdf

Fast image encryption algorithm based on parallel computing system
https://www.sciencedirect.com/science/article/abs/pii/S0020025519301641

Improved Performance of Advance Encryption Standard using Parallel Computing
https://www.ijera.com/papers/Vol2_issue1/FC21967971.pdf

Parallel Implementation and Analysis of Encryption Algorithms
https://www.researchgate.net/publication/324747960_Parallel_Implementation_and_Analysis_of_Encryption_Algorithms

https://www.academia.edu/81959720

Design of a parallel computing based cryptosystem
https://www.researchgate.net/publication/228631811_Design_of_a_parallel_computing_based_cryptosystem

Parallel AES Algorithm for Fast Data Encryption on GPU
https://shop.tarjomeplus.com/UploadFileEn/TPLUS_EN_5060.pdf

Parallelization Of RSA Algorithm Using OpenMP
https://www.jetir.org/papers/JETIR2007379.pdf

Parallel Execution of RSA Encryption on the GPU of the RPi
https://www.mnm-team.org/pub/Fopras/muni19/PDF-Version/muni19.pdf

Heterogeneous parallel computing for data encryption application
https://ieeexplore.ieee.org/document/6316679

Encryption Algorithms - Parallelization
https://www.ijcstjournal.org/volume-2/issue-4/IJCST-V2I4P34.pdf

Parallel Image Encryption Algorithm Using Partitioned Cellular Automata on Graphic Processor Unit
https://uhra.herts.ac.uk/bitstream/handle/2299/27300/Parallel_Image_Encryption_Algorithm_using_Partitioned_Cellular_Automata_on_Graphic_Processor_Unit.pdf?sequence=1

Implementation of cryptographic algorithms via multithreading
http://www.bcc.bas.bg/bcc_volumes/Volume_52_Special_A_2020/BCC-52-A-2020-220-224-Kalpachka_R218_EP.pdf

An Optimized Parallel Computation of Advanced Encryption Algorithm using Open MP -A Review
https://www.ijarcce.com/upload/2016/february-16/IJARCCE%2083.pdf

Parallelization of Eencryption and Hashing algorithm using GPU
https://www.irjet.net/archives/V2/i6/IRJET-V2I6103.pdf

Parallel Implementation of AES Algorithm on GPU
https://ijcsmc.com/docs/papers/March2015/V4I3201529.pdf

Performance Improvement of Double Data Encryption Standard Algorithm using Parallel Computation

https://www.ijcaonline.org/archives/volume179/number25/shorman-2018-ijca-916527.pdf

Parallelization of Cryptographic Algorithm Based on Different Parallel Computing Technologies
https://ceur-ws.org/Vol-2824/paper3.pdf

Performance Modeling of Scalable Encryption Algorithm using Parallel Computation
https://ijssst.info/Vol-14/No-2/paper7.pdf

Elliptic Curve Cryptography on Embedded Multicore Systems
https://www.esat.kuleuven.be/cosic/publications/article-937.pdf

Enhanced RC5 Algorithm Using Parallel Computing for Communication Networks
http://www.scielo.org.co/pdf/ince/v15n29/1794-9165-ince-15-29-103.pdf

Suitable encrypting algorithms in Parallel Processing for improved efficiency
https://iopscience.iop.org/article/10.1088/1757-899X/981/2/022017/pdf

Parallel Message Authentication Algorithm Implemented Over Multicore CPU
https://inass.org/wp-content/uploads/2023/05/2023083152-2.pdf

Cryptography for Parallel RAM from Indistinguishability Obfuscation*
https://www.iis.sinica.edu.tw/papers/kmchung/21125-F.pdf

https://core.ac.uk/download/pdf/81135025.pdf

REDES NEURONALES

A Parallel Computing Platform for Training Large Scale Neural Networks
https://cs.nju.edu.cn/rinc/publish/download/2013/Parallel.pdf

Parallelization Techniques for Verifying Neural Networks
https://arxiv.org/pdf/2004.08440

Neural Network Parallel Computing
https://www.researchgate.net/publication/221669771_Neural_Network_Parallel_Computing

GPU Parallelization of Neural Network
https://www.ijcsit.com/~ijcsitco/docs/Volume%209/vol9issue2/ijcsit2018090203.pdf

True Parallel Processing in Artificial Neural Network
https://www.emerald.com/insight/content/doi/10.1108/03684920110405764/full/pdf

Parallel Implementation of Neural Networks for Solving the Problem of Oil Production
https://ceur-ws.org/Vol-3680/S3Paper1.pdf

Artificial Neural Networks on Massively Parallel Computer Hardware
https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=98018df0fd490a8301031be1ad6153746f623319

Parallel and Distributed Deep Learning
https://stanford.edu/~rezab/classes/cme323/S16/projects_reports/hedge_usmani.pdf

A parallel computing and neural network implementation of LBG image vector quantization
https://ieeexplore.ieee.org/document/614985

Parallel Backpropagation Neural Network Training Techniques using Graphics Processing Unit
https://thesai.org/Downloads/Volume10No2/Paper_70-Parallel_Backpropagation_Neural_Network_Training.pdf

Implementing Neural Network Models on Parallel Computers

https://web.archive.org/web/20180728032826id_/https://watermark.silverchair.com/30-5-413.pdf?token=AQECAHi208BE49Ooan9kkhW_Ercy7Dm3ZL_9Cf3qfKAc485ysgAAAakwggGlBgkqhkiG9w0BBwagggGWMIIBkgIBADCCAYsGCSqGSIb3DQEHATAeBglghkgBZQMEAS4wEQQMiCwHcj-pK7nMAm6wAgEQgIIBXBytuYqvSlxBLu_iNNwaDPSbTrhm29ayOOBCvv0bspxdi4F6qQRvw_W9RXI0vqKiHwDjaGyDcoCH1z1lTvLud0G6gzY5jp1kTmgYL_idXubvIQibV9GfVSHAP4_2XvH6ZsDo5owMVxTRDabiEH3mzRR7CHxc-Iz5SxBUVbhCgCR-Cy-4XAaC8Pmx63pgB03R9UQxkj3x1XnyH1xuoEN36IH4T4c5txws8GdhBEK4kvvNsXjU2sraNIOcRHcwQh096Mdf1MIml1YvA8dXYC1VrM1fiznyn8hV71pfRoDYalH8G-o0u4z5ochH-MgY3qL3zb8ZRz37fOHy-jUxalJJ2dR7BTUrlPnDmX7omu35lJxEaGLjoPuqtgtfEIuYn9nHn5k5R7IDUyPJ4sn89KdhsqNPzqX4ucbix-s3uj_e8jziH11JLg7UDu5OX4RrZ3c8gQ0sxiZ7L5EGLsUFcg

Parallel computation of neural networks in a processor pipeline with partially shared memory
https://ieeexplore.ieee.org/document/130347

REFERENCIA

https://typeset.io/pdf/parallel-processing-in-neural-systems-and-computers-2d59veoi9i.pdf
https://www.worldscientific.com/doi/epdf/10.1142/S0218213093000266

ALGEBRA LINEAL

Parallel Implementation of Singular Value Decomposition (SVD) in Image Compression using Open Mp and Sparse Matrix Representation
https://sciresol.s3.us-east-2.amazonaws.com/IJST/Articles/2015/Issue-13/Article8.pdf

An overview of parallel algorithms for the singular value and symmetric eigenvalue problems
https://core.ac.uk/download/pdf/81925994.pdf

Modeling Singular Valued Decomposition (SVD) Techniques using Parallel Programming with pMATLAB.
https://archive.ll.mit.edu/HPEC/agendas/proc09/Day1/PA05_Goenaga-Rodriguez_abstract.pdf

Parallel algorithms for computing sparse matrix permanents
https://www.researchgate.net/publication/344708175_Parallel_algorithms_for_computing_sparse_matrix_permanents

Basic Sparse Matrix Computations On Massively Parallel Computers
https://www.researchgate.net/publication/277285932_Basic_Sparse_Matrix_Computations_On_Massively_Parallel_Computers

Parallel Sparse Matrix-Vector and Matrix-Transpose-Vector Multiplication Using Compressed Sparse Blocks
https://www.fftw.org/~athena/papers/csb.pdf

Parallel Algorithms for Sparse Matrix Multiplication and Join-Aggregate Queries
https://cs.uwaterloo.ca/~xiaohu/pods20.pdf

Highly Scalable Parallel Algorithms for Sparse Matrix Factorization
https://rsim.cs.uiuc.edu/arch/qual_papers/systems/8.pdf

Optimizing Parallel Sparse Matrix-Vector Multiplication by Corner Partitioning
https://www.sandia.gov/app/uploads/sites/197/2022/05/PARA08.pdf

Techniques for parallel manipulation of sparse matrices
https://snir.cs.illinois.edu/listed/J23.pdf

Parallel Algorithms for Singular Value Problems
https://link.springer.com/chapter/10.1007/978-3-642-75536-1_9

Computation of the Singular Value Decomposition using mesh-connented processors
https://maths-people.anu.edu.au/~brent/pd/rpb080i.pdf

Parallel QR factorization by Householder and modified Gram-Schmidt algorithms
https://www.cs.umd.edu/users/oleary/reprints/j32.pdf

Parallel QR Factorization using Givens Rotations in MPI-CUDA for Multi-GPU

https://thesai.org/Downloads/Volume11No5/Paper_78-Parallel_QR_Factorization_using_Givens_Rotations.pdf

MÉTODOS NUMÉRICO

Parallel numerical linear algebra
https://www.semanticscholar.org/paper/Parallel-numerical-linear-algebra-Factorization/71d4dea456a43b6b4d7dbc74c6cdc3543db1feee

Parallel Processing Model for Cholesky Decomposition Algorithm in AlgoWiki Project
https://www.researchgate.net/profile/Igor-Konshin/publication/317006595_Parallel_Processing_Model_for_Cholesky_Decomposition_Algorithm_in_AlgoWiki_Project/links/5bb22168299bf13e6059d707/Parallel-Processing-Model-for-Cholesky-Decomposition-Algorithm-in-AlgoWiki-Project.pdf

Block-Cholesky for parallel processing
https://core.ac.uk/download/pdf/205788544.pdf

Parallel Hybrid Algorithm of Bisection and Newton-Raphson Methods to Find Non-Linear Equations Roots
https://www.researchgate.net/publication/361348708_Parallel_Hybrid_Algorithm_of_Bisection_and_Newton-Raphson_Methods_to_Find_Non-Linear_Equations_Roots

New Multilevel Newton-Raphson Method for Parallel Circuit Simulation
http://lib.tkk.fi/Books/2001/isbn9512263378/papers/1053.pdf

Parallel Hybrid Algorithm of Bisection and Newton-Raphson Methods to Find Non-Linear Equations Roots
https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=85fffac3ea7a15d90202568839c47eb65a532d22

An Efficient Multi-Threaded Newton-Raphson Algorithm for Strong Coupling Modeling of Multi-Physics Problems
https://www.mcgill.ca/ece/files/ece/58_a_akabari_d_giannacopoulos_2021_an_efficient_multi-threaded_newton_raphson_algorithm_for_strong_coupling_modeling_of_multi-physics_problems_accepted_computer_physics_2020.pdf

Parallelizing a Fourth-Order Runge-Kutta Method
https://nvlpubs.nist.gov/nistpubs/Legacy/IR/nistir6031.pdf

Parallel iteration of high-order Runge-Kutta methods with stepsize control
https://ir.cwi.nl/pub/1663/1663D.pdf

Explicit, high-order Runge-Kutta-Nystrom methods for parallel computers
https://core.ac.uk/download/pdf/301669448.pdf

A New Parallel Algorithm for Lagrange Interpolation on a Hypercube
https://pdf.sciencedirectassets.com/271503/1-s2.0-S0898122106X08696/1-s2.0-S0898122106000368/main.pdf?X-Amz-Security-Token=IQoJb3JpZ2luX2VjEJf%2F%2F%2F%2F%2F%2F%2F%2F%2FwEaCXVzLWVhc3QtMSJIMEYCIQDrs3GnCi0aavit6DaXlqQEyvorvc7gd8OTdJPwP47ULAIhANcVaRp4aTpiRZ632c4QUBZcx%2BB%2B%2FrHBpP4obr2PNLJJKrwFCMD%2F%2F%2F%2F%2F%2F%2F%2F%2F%2F%2FwEQBRoMMDU5MDAzNTQ2ODY1IgyUAWUPIkbalcflcBYqkAWJVjI0XsV%2B7VZrWaygrYb2b5tlmsG%2FiDkotomHbqGYOPcgUVtjSNdcpSmSLzYj7rC0phagTktb9eIr3R2OO0BPnBNVLIuIOWuJL2N4c5YpFvuq9IUXri71vuHoPm%2Fw0nxPjIlQX9o9UjJsBC%2Bwx7QH2PP0VLDDqZq3MuvzHV3h43DMb0CT0KQPsj6%2BM%2B4%2FeOv6L3P2UnlLBP48RPRogi3gKzwuwE2tOwfZLjshdwwG4VPQcwVha5HQauHFuQRjCYCfakQv5FYtJtuiVnU05ES0AMJePm5wTSlD3tE1to4LzlJJDvgUTGcIqnV8RGNT8YCssnU30YUSbas9BCTBhiJ893stXwPHY4As8laIzPrzVmHGHq1L3KBGFr4JrgR%2BUo43ytDIhqWNPSK0gaiWD7vTUTzzI3aDwceehq6Vh8U5vX7il%2Btj%2BBcIe4FXVhLFkvBgpMairMMRUvAiJc2iOiLfSyvAXe0Dr1IlxRzBPY0QX07GgXfpA53cbw6%2FM6QJ9YkaWQtb4q4F%2Bw%2BaLiQHtHFxIZP7IHC0qU2gWFeJGVSY7VhdNdO%2FjKpXl99YGxoIj9foVZC6rqQR33buTwtsna4HVHRwRqTA21Zrq7dQJcefVjiz6m7jCGH%2BLR2rQ5K4UhUfbdvTJXfkFTMOsr4qRBUx8QwL0Oj8NNNPwes6FNd4BigW83eJ%2F2sNJ6BIZJBe6GD9tZ7drIoJkg%2BaN5ji%2BUXi1Zs%2BZW21VR7j6IkoRSYeQVAPmXNkxhj4055l%2B6fP5PiOp56uduc%2Fles82cfOjRX6Q8z3hSc2DSyHFb9Om%2FskW0bSDFkD61OEkVpWY5CcPG8cnnatbwpR523HsGHLuI7BXncyDpftC6lixCAfgD1VWDCVoZG3BjqwAQU%2BbWkb%2BgbxAshjfWh9se%2FGiBIGnSpfjQxP11ZBYGRz82GOtwGlMjRj7iUOoZxhqCp9q9V9iz8Aj7xhbvuq%2BsP0qAVvEbuD7OLYE4PM5ARaGyb4QQo%2BafvL1xXYrPkRP5Wm48FOjSntPjU1G9p5%2FPkDITHQ8wCvuZTOJ3IJSdgxy6rc8%2B4vT5cyH6e42g9k6i4InzEZN8hIQ%2B4eAEyyef1Pfp015D4KU%2BmQvLSo7i7p&X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Date=20240913T150238Z&X-Amz-SignedHeaders=host&X-Amz-Expires=300&X-Amz-Credential=ASIAQ3PHCVTY76BQE2TU%2F20240913%2Fus-east-1%2Fs3%2Faws4_request&X-Amz-Signature=6af1c5ebb5f062f8b7d0ef784914099dfff3602b3c831fe6738ae51be689439d&hash=4da0b8bc6e767e6cbe47ded32104f9758a5cf85067420baa3e6c28c234111925&host=68042c943591013ac2b2430a89b270f6af2c76d8dfd086a07176afe7c76c2c61&pii=S0898122106000368&tid=spdf-71043caf-9a9d-44ae-96a5-15acd5d42475&sid=ee5ed4ba8c8988404f7920626c3abd8f40fbgxrqa&type=client&tsoh=d3d3LnNjaWVuY2VkaXJlY3QuY29t&ua=1e015a03555d515109&rr=8c2904f99eae4ffb&cc=pe

Open Multi Processing (OpenMP) of Gauss-Jordan Method for Solving System of Linear Equations
https://www.researchgate.net/publication/224261066_Open_Multi_Processing_OpenMP_of_Gauss-Jordan_Method_for_Solving_System_of_Linear_Equations

Open Multi Processing (OpenMP) of Gauss-Jordan Method for Solving System of Linear Equations
https://web.archive.org/web/20170808041534id_/http://users.uom.gr/~pmichailidis/cpapers/cpaper031.pdf

MPI Parallel Implementation of Jacobi
https://proceedings.ictinnovations.org/attachment/paper/94/mpi-parallel-implementation-of-jacobi.pdf

Parallel Implementation of Newton's Method for Solving Large-Scale Linear Programs
http://www.ccas.ru/gridgen/lab/papers/Parallel_implementation_of_Newton%27s_method_for_sol.pdf

Parallel Hybrid Algorithm of Bisection and Newton-Raphson Methods to Find Non-Linear Equations Roots
https://www.semanticscholar.org/paper/Parallel-Hybrid-Algorithm-of-Bisection-and-Methods-Hussein-Ali/85fffac3ea7a15d90202568839c47eb65a532d22

LIBRO
http://ndl.ethernet.edu.et/bitstream/123456789/33236/1/9.pdf