

## 5.2 Relación de productos de investigación de las LGAC de estudiantes y profesores/profesoras del núcleo académico Maestría en Ciencias en Computación

Departamento de Computación – CINVESTAV-IPN

PNPC 2021

### LGAC1: Inteligencia Artificial

En la Figura 1, se muestra la cantidad de diferentes tipos de productos, como tesis de maestría, artículos de revista, libros, capítulos de libro, artículos de congreso y patentes, derivados de la LGAC de Inteligencia Artificial, que contribuyeron a la productividad total del Departamento de Computación entre 2016 y 2020.

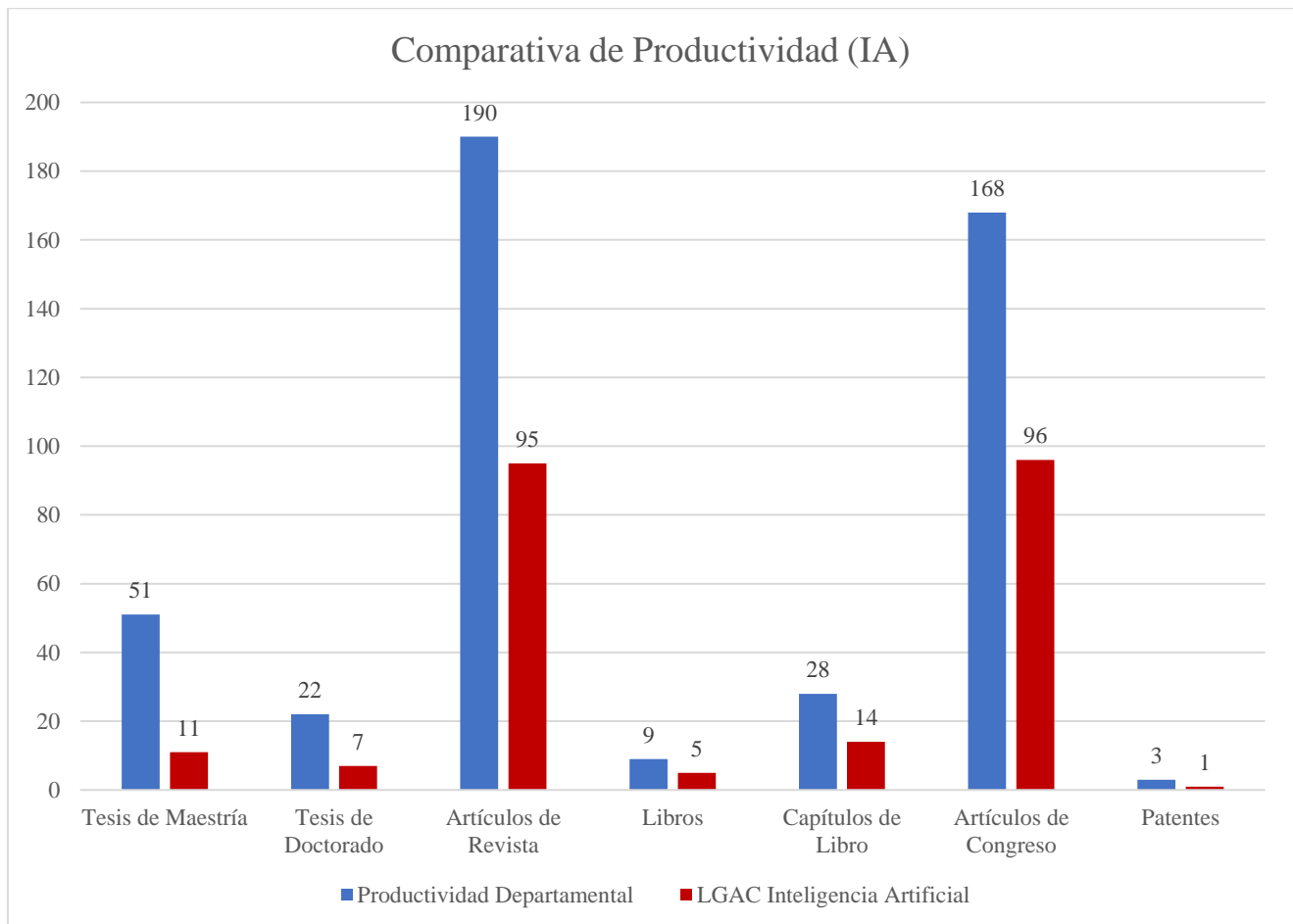


Figura 1. Contribución de la LGAC de Inteligencia Artificial a la productividad total del Departamento de Computación de 2016 a 2020

En la Tabla 1, se muestra el desglosado por año de los diferentes tipos de productos derivados de la LGAC de Inteligencia Artificial. Después, se enlistan los productos organizados por tipo de producto y ordenados de manera cronológica de aparición (del más antiguo al más reciente).

<b>Año</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>Total</b>
<b>Tesis de maestría</b>	4	1	1	2	3	11
<b>Tesis de doctorado</b>	0	3	1	2	1	7
<b>Artículos de revista</b>	18	15	17	22	23	95
<b>Libros</b>	2	2	0	0	1	5
<b>Capítulos de libro</b>	6	1	3	2	2	14
<b>Artículos en memorias de congresos</b>	19	20	20	16	21	96
<b>Patentes Nacionales</b>	0	0	0	0	1	1

Tabla 1. Número total de productos por año generados por profesores y estudiantes de la LGAC de Inteligencia Artificial

## **Tesis de maestría**

1. M. en C. Dulce Adriana Gómez Rosal, “**Diseño y Desarrollo de un Sistema de Reconocimiento de Gestos Manuales para el Control de un VANT**”. Fecha de Grado: 12/09/2016. Directores de Tesis: Dra. Xiaou Li y Dr. Jiacun Wang.
2. M. en C. Jesús Guillermo Falcón Cardona, “**iMOACOR: Un Nuevo Algoritmo de Optimización Multi-Objetivo basado en Colonias de Hormigas para Espacios de Búsqueda Continuos**”. Fecha de Grado: 29/09/2016. Director de Tesis: Dr. Carlos A. Coello Coello.
3. M. en C. Juan Luis Salazar Mendoza, “**Un nuevo optimizador multi-objetivo mediante cúmulos de partículas basado en SPSO2011**”. Fecha de Grado: 01/12/2016. Director de Tesis: Dr. Carlos A. Coello Coello.
4. M. en C. Jonathan Téllez Girón Muñoz, “**Modelo Formal y Simulación Computacional de Estrategias en el Fútbol**”. Fecha de Grado: 05/12/2016. Director de Tesis: Dr. José Matías Alvarado Mentado.

5. M. en C. Jorge Jiménez Montiel, "**Optimización Multi-Objetivo usando un Algoritmo Compacto de Cúmulos de Partículas**". Fecha de Grado: 30/10/2017. Director de Tesis: Dr. Carlos A. Coello Coello.
6. M. en C. Jorge Salinas Lara. "**Un algoritmo micro-poblacional basado en cúmulos de partículas para problemas de optimización de alta dimensionalidad**". Fecha de Grado: 16/11/2018. Director de Tesis: Dr. Carlos A. Coello Coello.
7. M. en C. Diana Valencia Rodríguez, "**Estudio de topologías cumulares y su impacto en el desempeño de un optimizador para problemas multiobjetivo**". Fecha de grado: 08/10/2019. Director de tesis: Dr. Carlos A. Coello Coello.
8. M. en C. Amín Vanya Bernabé Rodríguez, "**Diseño de una nueva función de escalarización usando programación genética**". Fecha de grado: 02/12/2019. Director de tesis: Dr. Carlos Artemio Coello Coello.
9. M. en C. Oscar Pacheco del Moral, "**Diseño de un nuevo algoritmo basado en evolución diferencial para optimización global a gran escala y su implementación eficiente en GPU**". Fecha de grado: 13/10/2020. Director de tesis: Dr. Carlos Artemio Coello Coello.
10. M. en C. Gonzalo Adán Chávez Fragoso, "**Reconocimiento de marcadores con redes profundas**". Fecha de Grado: 01/10/2020. Director de Tesis: Dr. Luis Gerardo de la Fraga.
11. M. en C. Juan Antonio Leyva García. "**Segmentación automática de tejido muscular en tomografía computarizada en L3 con aprendizaje profundo**". Fecha de Grado: 16/12/2020. Directores de Tesis: Dra. Sonia Guadalupe Mendoza Chapa y Dr. Hugo Jair Escalante Balderas.

## Tesis de doctorado

1. Dr. Sergio Jesús Alvarado García, "**Estrategias Meméticas Basadas en Técnicas de Búsqueda Local sin Gradiente**". Fecha de Grado: 23/06/2017. Director de Tesis: Dr. Oliver Steffen Schütze.
2. Dr. Víctor Adrián Sosa Hernández, "**Estrategias Meméticas y Evolutivas para el Tratamiento de Problemas de Optimización Multi-Objetivo Dependientes de Parámetros**". Fecha de Grado: 05/12/2017. Director de Tesis: Dr. Oliver Steffen Schütze.
3. Dr. Luis Miguel Antonio, "**Esquemas para Resolver Problemas de Optimización Multi-Objetivo a Gran Escala Usando Algoritmos Evolutivos**". Fecha de Grado: 11/12/2017. Director de Tesis: Dr. Carlos A. Coello Coello.
4. Dra. Raquel Hernández Gómez, "**Híper-heurísticas Paralelas para Optimización Multiobjetivo**". Fecha de grado: 21/03/2018. Director de Tesis: Dr. Carlos A. Coello Coello.
5. Dr. Edgar Manoátl López, "**Diseño de Algoritmos Meméticos Multi-Objetivo Paralelos en GPUs**". Fecha de Grado: 26/02/2019. Director de Tesis: Dr. Carlos A. Coello Coello.

6. Dra. Miriam Pescador Rojas, “**Técnicas de Adaptación para Funciones de Escalarización usadas en Algoritmos Evolutivos Basados en Descomposición**”. Fecha de Grado: 28/03/2019. Director de Tesis: Dr. Carlos A. Coello Coello.

7. Dr. Jesús Guillermo Falcón Cardona. “**Nuevos descubrimientos en torno a algoritmos evolutivos multi-objetivo basados en indicadores**”. Fecha de Grado: 04/11/2020. Director de Tesis: Dr. Carlos Artemio Coello Coello.

## Artículos de revista

1. Farid García<sup>D</sup>, Jair Cervantes<sup>D</sup>, Asdrubal López<sup>D</sup> and Matias Alvarado, “**Fruit Classification by Extracting Color Chromaticity, Shape and Texture Features: Towards an Application for Supermarkets**”, *IEEE Latin America Transactions*, Vol. 14, No. 7, pp. 3434-3443, 10 October 2016.

2. Adriana Menchaca-Mendez<sup>D</sup> and Carlos A. Coello Coello, “**Selection mechanisms based on the maximin fitness function to solve multi-objective optimization problems**”, *Information Sciences*, Vol. 332, pp. 131-152, March 1, 2016.

3. Qiuzhen Lin, Zhiwang Liu, Qiao Yan, Zhihua Du, Carlos A. Coello Coello, Zhengping Liang, Wenjun Wang and Jianyong Chen, “**Adaptive composite operator selection and parameter control for multiobjective evolutionary algorithm**”, *Information Sciences*, Vol. 339, pp. 332-352, April 20, 2016.

4. Gustavo R. Zavala, Antonio J. Nebro, Francisco Luna and Carlos A. Coello Coello, “**Structural Design using Multi-objective Metaheuristics. Comparative Study and Application to a Real-World Problem**”, *Structural and Multidisciplinary Optimization*, Vol. 53, No. 3, pp. 545-566, 2016.

5. Carlos Segura, Carlos A. Coello Coello, Gara Miranda and Coromoto León, “**Using multi-objective evolutionary algorithms for single-objective constrained and unconstrained optimization**”, *Annals of Operations Research*, Vol. 240, No. 1, pp. 217-250, May 2016.

6. Francisco Luna, Gustavo R. Zavala, Antonio J. Nebro, Juan J. Durillo and Carlos A. Coello Coello, “**Distributed multi-objective metaheuristics for real-world structural optimizations problems**”, *The Computer Journal*, Vol. 59, No. 6, pp. 777-792, June 2016.

7. Alejandro Rosales-Pérez, Jesus A. Gonzalez, Carlos A. Coello Coello, Carlos a. Reyes-Garcia, Hugo Jair Escalante, “**EMOPG+FS: Evolutionary Multi-Objective Prototype Generation and Feature Selection**”, *Intelligent Data Analysis*, Vol. 20, No. s1, pp. s37-s51, 2016.

8. Qiuzhen Lin, Jianyong Chen, Zhi-Jui Zhan, Wei-neng Chen, Carlos A. Coello Coello, Yilong Yin, Chih-Min Lin and Jun Zhang, “**A Hybrid Evolutionary Immune Algorithm for Multiobjective Optimization Problems**”, *IEEE Transactions on Evolutionary Computation*, Vol. 20, No. 5, pp. 711-728, October 2016.

9. Oliver Schütze, Adanay Martín<sup>M</sup>, Adriana Lara<sup>D</sup>, Sergio Alvarado<sup>D</sup>, Eduardo Salinas<sup>M</sup>, Carlos A. Coello Coello, “**The Directed Search Method for Multi-Objective Memetic Algorithms**”, *Computational Optimization and Applications*, Vol. 63, No. 2, pp. 305-332, March 2016.

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## 5.2 Relación de productos de investigación de las LGAC de estudiantes y profesores/profesoras del núcleo académico Maestría en Ciencias en Computación

Departamento de Computación – CINVESTAV-IPN

PNPC 2021

### LGAC2: Sistemas de Cómputo

En la Figura 1, se muestra la cantidad de diferentes tipos de productos, como tesis de maestría, artículos de revista, libros, capítulos de libro, artículos de congreso y patentes, derivados de la LGAC de Sistemas de Cómputo, que contribuyeron a la productividad total del Departamento de Computación entre 2016 y 2020.

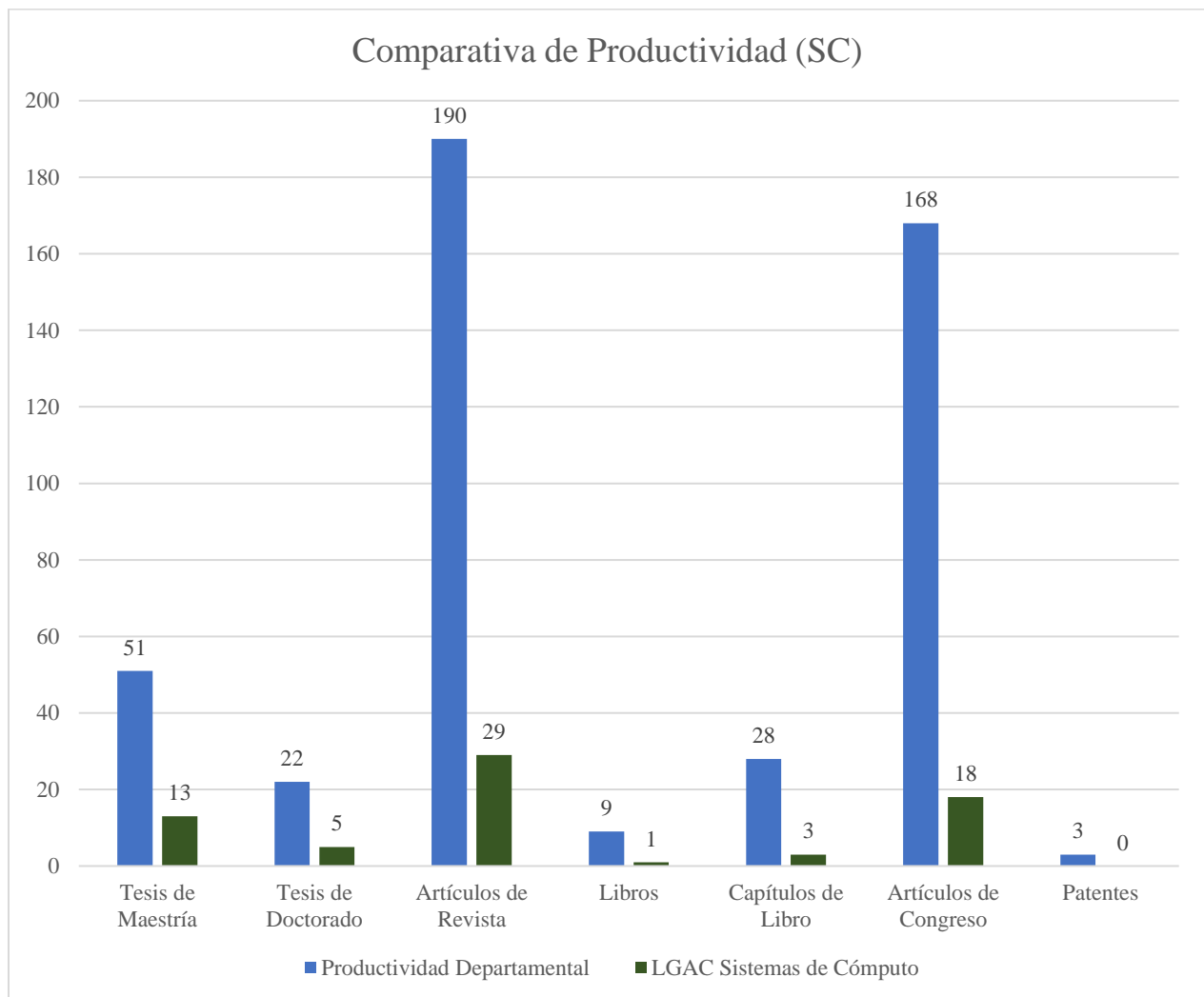


Figura 1. Contribución de la LGAC de Sistemas de Cómputo a la productividad del Departamento de Computación de 2016 a 2020

En la Tabla 1, se muestra el desglosado por año de los diferentes tipos de productos derivados de la LGAC de Sistemas de Cómputo. Después, se enlistan los productos organizados por tipo de producto y ordenados de manera cronológica de aparición (del más antiguo al más reciente).

<b>Año</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>Total</b>
<b>Tesis de maestría</b>	3	3	3	2	2	13
<b>Tesis de doctorado</b>	1	1	1	2	0	5
<b>Artículos de revista</b>	1	2	5	12	9	29
<b>Libros</b>	1	0	0	0	0	1
<b>Capítulos de libro</b>	0	0	1	1	1	3
<b>Artículos en memorias de congresos</b>	5	2	6	5	0	18

Tabla 1. Número total de productos por año generados por profesores y estudiantes de la LGAC de Sistemas de Cómputo

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1. M. en C. Daniel Alberto Torres, “**Paralelización de los algoritmos de cifrado simétricos AES-CTR y AES-OTR sobre un kit de desarrollo NVIDIA Jetson TK1**”. Fecha de Grado: 01/12/2016. Directores de Tesis: Dr. Amílcar Meneses Viveros y Dr. Cuauhtémoc Mancillas López.
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3. M. en C. Guillermo Monroy Rodríguez, “**Uso del efecto Doppler para detección de obstáculos en desplazamiento peatonal**”. Fecha de Grado: 13/12/2016. Director de Tesis: Dr. José Guadalupe Rodríguez García.
4. M. en C. Manuel Portillo Cedillo, “**Sistema de votación por internet FIDELIS**”. Fecha de Grado: 21/04/2017. Directores de Tesis: Dr. Amílcar Meneses Viveros y Dra. Lil María Xibai Rodríguez Henríquez.
5. M. en C. Laiphel Marco Gómez Trujillo, “**Análisis de la seguridad y privacidad ofrecida por dispositivos Android**”. Fecha de Grado 11/10/2017. Director de Tesis: Dr. Francisco José Rambó Rodríguez Henríquez.

6. M. en C. Juan Cipriano Hernández Cortés, “**Implementación Paralela y Heterogénea de la Transformación de Householder y sus Aplicaciones**”. Fecha de Grado: 11/12/2017. Director de Tesis: Dr. Amilcar Meneses Viveros.
7. M. en C. Daybelis Jaramillo Olivares, “**Prototipo de un sistema de Ojo de Halcón**”. Fecha de Grado: 28/08/2018. Director de Tesis: Dr. Luis Gerardo de la Fraga.
8. M. en C. Adrián Josué Ramírez Díaz. “**Diseño e implementación de robots de servicio de bajo costo para adultos mayores**”. Fecha de Grado: 30/11/2018. Directores de Tesis: Dr. José G. Rodríguez García y Dra. Sonia G. Mendoza Chapa.
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10. M. en C. Michel Torres Alonso, “**Interacción aumentada con un objeto deformable**”. Fecha de grado: 25/09/2019. Director de tesis: Dr. Luis Gerardo de la Fraga.
11. M. en C. Sergio Alberto Herrera Castro, “**Sistema de odometría visual e inercial con un marcador**”. Fecha de grado: 30/10/2019. Director de tesis: Dr. Luis Gerardo de la Fraga.
12. M. en C. Ángel Isaac Rodríguez Cosme. “**Arquitectura para un sistema de denuncias basado en Blockchain y tecnologías en la nube**”. Fecha de Grado: 24/11/2020. Directores de Tesis: Dra. Sonia Guadalupe Mendoza Chapa y Dr. Cuauhtemoc Mancillas López.
13. M. en C. Lisa Pal. “**Un algoritmo paralelo de análisis de textura basado en auto-información mutua para análisis de imágenes médicas**”. Fecha de Grado: 27/11/2020. Directores de Tesis: Dr. Amilcar Meneses Viveros y Dr. Wilfrido Gómez Flores.

## **Tesis de doctorado**

1. Dr. Daniel López Escogido, “**Escaner 3D de alta precisión**”. Fecha de Grado: 24/06/2016. Director de Tesis: Dr. Luis Gerardo de la Fraga.
2. Dr. José Uriel Cabello Sánchez, “**XSCALA: Un marco de desarrollo para soportar programación paralela por tareas en sistemas de cómputo híbridos heterogéneos**”. Fecha de Grado: 27/02/2017. Directores de Tesis: Dr. Amílcar Meneses Viveros y Dr. José Guadalupe Rodríguez García.
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5. Dr. José Eduardo Ochoa Jiménez, “**Análisis e implementación eficiente de protocolos criptográficos de llave pública**”. Fecha de Grado: 28/02/2019. Director de Tesis: Dr. Francisco Rodríguez Henríquez.

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1. Leticia Dávila-Nicanor<sup>D</sup>, Aldo Benhumea-Peña, Carlos Omar González-Morán and Pedro Mejía-Alvarez, “**Functional Tester Runner Tool**”, *Research in Computing Science*. Vol. 109, pp. 69-79, 2016.

2. Luis Gerardo de la Fraga, Esteban Torres-Perez, Esteban Tlelo-Cuautle and Cuauhtemoc Mancillas-López, “**Hardware implementation of pseudo-random number generators based on chaotic maps**”, *Nonlinear Dynamics*, Vol. 90, No. 3, pp. 1661-1670, 2017.

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5. Heriberto Cruz-Hernández<sup>D</sup>, Luis Gerardo de la Fraga, “**A fiducial tag invariant to rotation, translation, and perspective transformations**”, *Pattern Recognition*, Vol. 81, pp. 213-223, September 2018.

6. Atil U. Ay, Cuauhtemoc Mancillas-López, Erdinç Öztürk, Francisco Rodriguez-Henriquez and Erkey Savaş, “**Constant-time hardware computation of elliptic curve scalar multiplication around the 128 bit security level**”, *Microprocessors and Microsystems*, Vol. 62, pp. 79-90, October 2018.

7. A.D. Pano-Azucena, E. Tlelo-Cuautle, G Rodriguez-Gomez, and L.G. de la Fraga, “**FPGA-based implementation of chaotic oscillators by applying the numerical method based on trigonometric polynomials**”, *AIP Advances*, Vol. 8, No. 7, Número de artículo: 075217, July 2018.

8. Ana Dalio Pano-Azucena, Esteban Tlelo-Cuautle, Sheldon X.-D. Tan, Brisbane Ovilla-Martínez and Luis Gerardo de la Fraga, “**FPGA-Based Implementation of a Multilayer Perceptron Suitable for Chaotic Time Series Prediction**”, *Technologies*, Vol. 6, No. 4, pp. 1-12, 2018.

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10. Ashwin Jha, Cuauhtemoc Mancillas-Lopez, Mridul Nandi and Sourav Sen Gupta, “**On Random Read Access in OCB**”, *IEEE Transactions on Information Theory*, Vol. 65, No. 12, pp. 8325-8344, December 2019.
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13. Satyam Paul, Wen Yu, Xiaoou Li, “**Discrete-time sliding mode for building structure bidirectional active vibration control**”, *Transactions of the Institute of Measurement and Control*, Vol.41, No.2, 433-446, January 2019.
14. Edgar Estrada, Wen Yu and Xiaoou Li, “**Stability and transparency of delayed bilateral teleoperation with haptic feedback**”, *International Journal of Applied Mathematics and Computer Science*, Vol. 29, No. 4, pp. 681-692, December 2019.
15. Alejandro Silva-Juarez, Gustavo Rodriguez-Gomez, Luis Gerardo de la Fraga, Omar Guillen-Fernandez and Esteban Tlelo-Cuautle, “**Optimizing the Kaplan–Yorke Dimension of Chaotic Oscillators Applying DE and PSO**”, *Technologies*, Vol. 7, No. 2, Article no. 38, 2019.
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17. Luis Rivera-Zamarripa, Lil M. Rodriguez<sup>D</sup>, Miguel Angel León Chávez, Nareli Cruz Cortés, Francisco Rodríguez-Henríquez, “**Security Analysis of the Mexican Fiscal Digital Certificate System**”, *Computación y Sistemas*, Vol. 23, No. 2, pp. 477-490, 2019.
18. Luis J. Domínguez Perez, Laiphel M. Gómez Trujillo<sup>M</sup>, Nareli Cruz Cortés and Francisco Rodríguez Henríquez, “**Sobre el impacto del colisionador SHA-1 en las firmas digitales mexicanas con valor legal**”, *Computación y Sistemas*, Vol. 23, No. 4, pp. 1181-1190, 2019.
19. Rafael Espinosa García, Guillermo Morales Luna, “**Seguridad de la información en instituciones de educación superior en México**”, *RAP. Revista de Administración Pública*, No. 148, Vol. LIV, No. 1, pp. 149-187, enero-abril 2019, ISSN 0482-5209.
20. Alejandro Silva-Juárez, Esteban Tlelo-Cuautle, Luis Gerardo de la Fraga, Rui Li, “**FPAAs-based implementation of fractional-order chaotic oscillators using first-order active filter blocks**”, *Journal of Advanced Research*, Vol 25, pp. 77-85, September 2020.

21. Esteban Tlelo-Cuautle, Martín Alejandro Valencia-Ponce, Luis Gerardo de la Fraga, “**Sizing CMOS Amplifiers by PSO and MOL to Improve DC Operating Point Conditions**”, *Electronics*, Vol. 9, No. 6, Article No. 1027, June 2020.
22. Lilian Bossuet, Cuauhtemoc Mancillas-López and Brisbane Ovilla-Martínez, “**Pipelined Hardware Implementation of COPA, ELmD, and COLM**”, *IEEE Transactions on Computers*, Vol. 69, No. 10, pp. 1533-1543, October 1, 2020.
23. Brisbane Ovilla-Martínez, Cuauhtemoc Mancillas-López, Alberto F. Martínez-Herrera and José A. Bernal-Gutiérrez<sup>M</sup>, “**FPGA Implementation of Some Second Round NIST Lightweight Cryptography Candidates**”, *Electronics*, Vol. 9, No. 11, Article No. 1940, November 2020.
24. Eduardo Ochoa-Jiménez<sup>D</sup>, Luis Rivera-Zamarripa, Nareli Cruz Cortés, Francisco Rodríguez-Henríquez, “**Implementation of RSA Signatures on GPU and CPU Architectures**”, *IEEE Access*, Vol. 8, pp. 9928-9941, 3 January 2020.
25. Angélica A. Serrano Rubio<sup>M</sup>, Amílcar Meneses Viveros, Guillermo B. Morales Luna, Mireya Paredes López<sup>M</sup>, “**Towards BIMAX: Binary Inclusion-MAXimal parallel implementation for gene expression analysis**”, *Computación y Sistemas*, Vol. 24, No. 1, pp. 255-267, 2020.
26. Luis Gerardo de la Fraga and Heriberto Cruz-Hernández<sup>D</sup>, “**Optimizing the Maximal Perturbation in Point Sets while Preserving the Order Type**”, *Mathematical and Computational Applications*, Vol. 24, No. 4, Article number: 97, 2019.
27. Miguel Tapia Romero<sup>M</sup>, Amilcar Meneses Viveros, Erika Hernandez Rubio, “**Parallel QR factorization using Givens rotations in MPI-CUDA for multi-GPU**”, *International Journal of Advanced Computer Science and Applications*, Vol 11, No. 5, pp. 636-645, 2020.
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2. Esteban Tlelo-Cuautle, Omar Guillén-Fernández, Jose de Jesus Rangel-Magdaleno, Ashley Melendez-Cano, Jose Cruz Nuñez-Perez and Luis Gerardo de la Fraga, “**FPGA Implementation of Chaotic Oscillators, Their Synchronization, and Application to Secure Communications**”, in Olfa Boubaker and Sajad Jafari (Editors), *Recent Advances in Chaotic Systems and Synchronization. From Theory to Real World Applications*, pp. 301-328, Academic Press, 2019, ISBN 978-0-12-815838-8.
3. Erika Hernández-Rubio, Amilcar Meneses-Viveros and Sonia G. Mendoza-Chapa, “**Mobile Distributed User Interfaces**”, IntechOpen, pp. 109-122, May 2020, ISBN: 978-1-78984-939-4.

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1. Luis Gerardo de la Fraga and Daniel López Escogido<sup>D</sup>, “**Point Cloud Registration with Surface Descriptors**”, in *10th International Conference on Computer Graphics, Visualization, Computer Vision and Image Processing 2016 CGVCVIP 2016*, Madeira, Portugal, July 2-4, 2016.
2. Nareli Cruz-Cortés, Eduardo Ochoa-Jiménez<sup>M</sup>, Luis Rivera Zamarripa and Francisco Rodríguez Henríquez, “**A GPU Parallel Implementation of the RSA Private Operation**”, in Carlos Jaime Barrios Hernández, Isidoro Gitler and Jaime Klapp (Editors), *High Performance Computing, Third Latin American Conference, CARLA 2016*, pp. 188-203, Springer. Communications in Computer and Information Science Boo Series Vol. 697, Mexico City, Mexico, August 29-September 2, 2016, ISBN 978-3-319-57971-9.
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4. Pedro Cruz Caballero<sup>M</sup>, Amilcar Meneses Viveros and Erika Hernández Rubio, “**Distributed User Interfaces for Luria’s Tests for Older Adults**”, *HCI International 2016 Posters’ Extended Abstracts 18th International Conference, HCI International 2016*. Toronto Canada. Julio 17-22, 2016, pp. 413-419, Springer. Communications in Computer and Information Science Vol. 617, Toronto, Ontario, Canada. Julio 17-22, 2016.
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*Computer Applications Volume 595 of the series Communications in Computer and Information Science*, pp. 144-155, Springer Professional Publishing, April 8, 2016.

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8. Thomaz Oliveira<sup>D</sup>, Julio López, Hüseyin Hişil, Armando Faz-Hernández<sup>M</sup>, Francisco Rodríguez-Henríquez, “**How to (Pre-)Compute a Ladder. Improving the Performance of X25519 and X448**”, in Carlisle Adams and Jan Camenisch (Editors), *Selected Areas in Cryptography - SAC 2017, 24th International Conference, Selected Papers*, pp. 172-191, Springer-Verlag, Lecture Notes in Computer Science Vol. 10719, 2018, ISBN 978-3-319-72564-2.

9. Alberto Beltrán-Herrera<sup>D</sup> and Sonia Mendoza, “**Fast Convex Hull by a Geometric Approach**”, in José Francisco Martínez-Trinidad, Jesús Ariel Carrasco-Ochoa, José Arturo Olvera-López and Sudeep Sarkar (Editors), *Pattern Recognition, 10th Mexican Conference, MCPR 2018*, pp. 51-61, Springer-Verlag, Lecture Notes in Computer Science Vol. 10880, Puebla, México, June 27-30, 2018, ISBN 978-3-319-91197-6.

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11. Ana Georgina Guerrero Huerta, Erika Hernández Rubio and Amilcar Meneses Viveros, “**Augmented Reality in Tablets for the Yerkes Test for Older Adults**”, in Jia Zhou and Gavriel Salvendy (Editors), *Human Aspects of IT for the Aged Population. Applications in Health, Assistance, and Entertainment, 4th International Conference, ITAP 2018, Held as Part of HCI International 2018, Proceedings, Part II*, pp. 36-48, Springer-Verlag, Lecture Notes in Computer Science Vol. 10927, Las Vegas, Nevada, USA, July 15-20, 2018, ISBN 978-3-319-92036-8.

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14. Adrián J. Ramírez-Díaz<sup>M</sup>, José Rodríguez-García, Sonia Mendoza and Amilcar Meneses Viveros, “**Indoor Location and Tracking System Using Computer Vision**”, in Yong Tang, Qiaohong Zu and José G. Rodríguez García (Editors), *Human Centered Computing, 4th International Conference, HCC 2018*, pp. 613-624, Springer. Lecture Notes in Computer Science Vol. 11354, Cham, Switzerland, 2019, ISBN 978-3-030-15126-3.
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## 5.2 Relación de productos de investigación de las LGAC de estudiantes y profesores/profesoras del núcleo académico Maestría en Ciencias en Computación

Departamento de Computación – CINVESTAV-IPN

PNPC 2021

### LGAC3: Teoría de la Computación

En la Figura 1, se muestra la cantidad de diferentes tipos de productos, como tesis de maestría, artículos de revista, libros, capítulos de libro, artículos de congreso y patentes, derivados de la LGAC de Teoría de la Computación, que contribuyeron a la productividad total del Departamento de Computación entre 2016 y 2020.

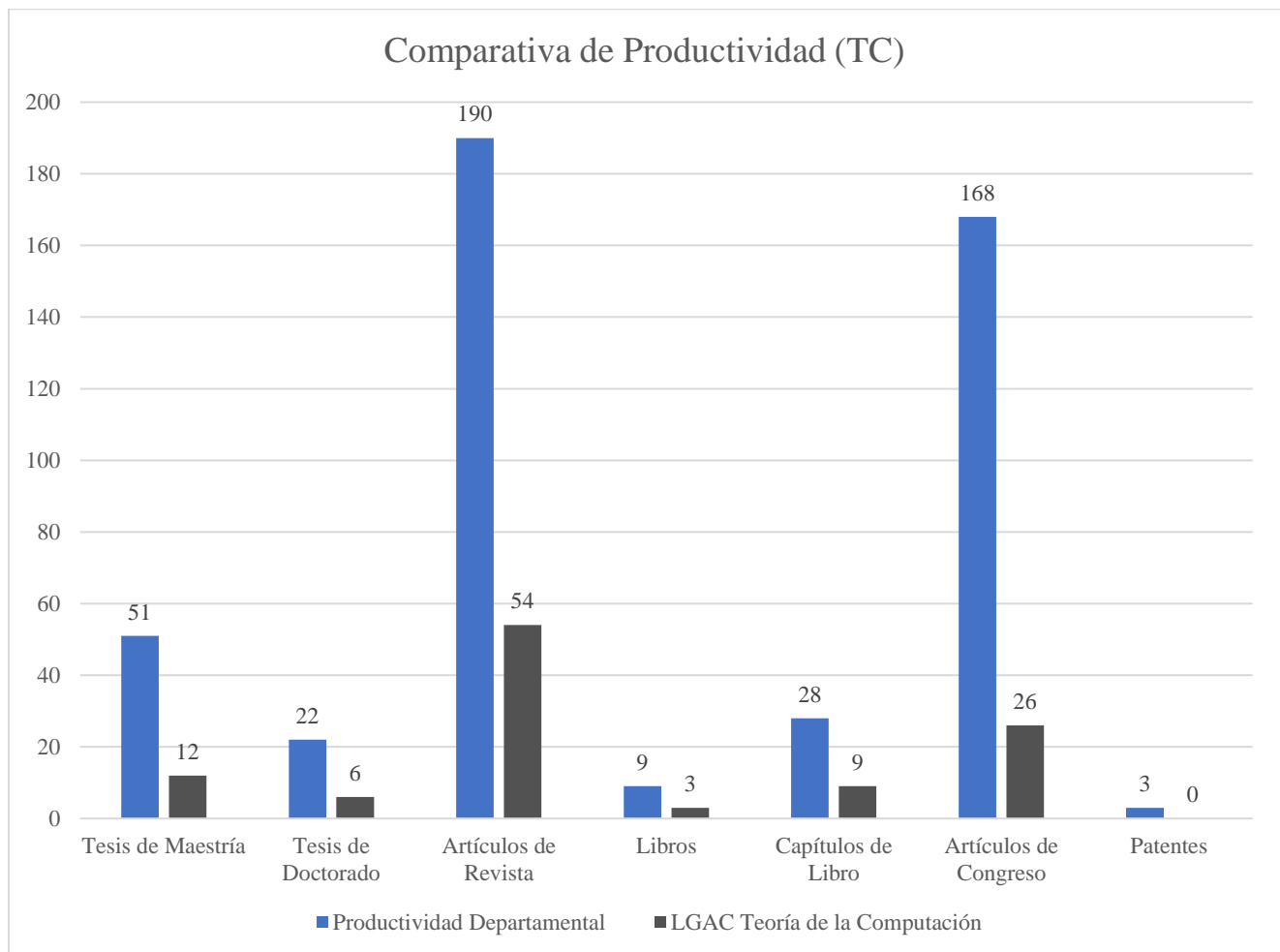


Figura 1. Contribución de la LGAC de Teoría de la Computación a la productividad del Departamento de Computación de 2016 a 2020

En la Tabla 1, se muestra el desglosado por año de los diferentes tipos de productos derivados de la LGAC de Teoría de la Computación. Después, se enlistan los productos organizados por tipo de producto y ordenados de manera cronológica de aparición (del más antiguo al más reciente).

<b>Año</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>Total</b>
<b>Tesis de maestría</b>	4	3	0	2	3	12
<b>Tesis de doctorado</b>	2	1	0	2	1	6
<b>Artículos de revista</b>	12	5	10	14	13	54
<b>Libros</b>	0	0	2	1	0	3
<b>Capítulos de libro</b>	6	2	1	0	0	9
<b>Artículos en memorias de congresos</b>	8	3	5	9	1	26

Tabla 1. Número total de productos por año generados por profesores y estudiantes de la LGAC de Teoría de la Computación

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21. Manuel Cázares and Oliver Schütze, “**An Application of Data Envelopment Analysis to the Performance Assessment of Online Social Networks Usage in Mazatlán Hotel Organizations**”, in Leonardo Trujillo, Oliver Schütze, Yazmin Maldonado and Paul Valle (Editors), *Numerical and Evolutionary Optimization – NEO 2017*, pp. 295-310, Springer, Studies in Computational Intelligence Vol. 785, Cham, Switzerland, 2019, ISBN 978-3-319-96103-3.
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## 5.2 Relación de productos de investigación de las LGAC de estudiantes y profesores/profesoras del núcleo académico Maestría en Ciencias en Computación

Departamento de Computación – CINVESTAV-IPN

PNPC 2021

### LGAC4: Sistemas de Información

En la Figura 1, se muestra la cantidad de diferentes tipos de productos, como tesis de maestría, artículos de revista, libros, capítulos de libro, artículos de congreso y patentes, derivados de la LGAC de Sistemas de Información, que contribuyeron a la productividad total del Departamento de Computación entre 2016 y 2020.

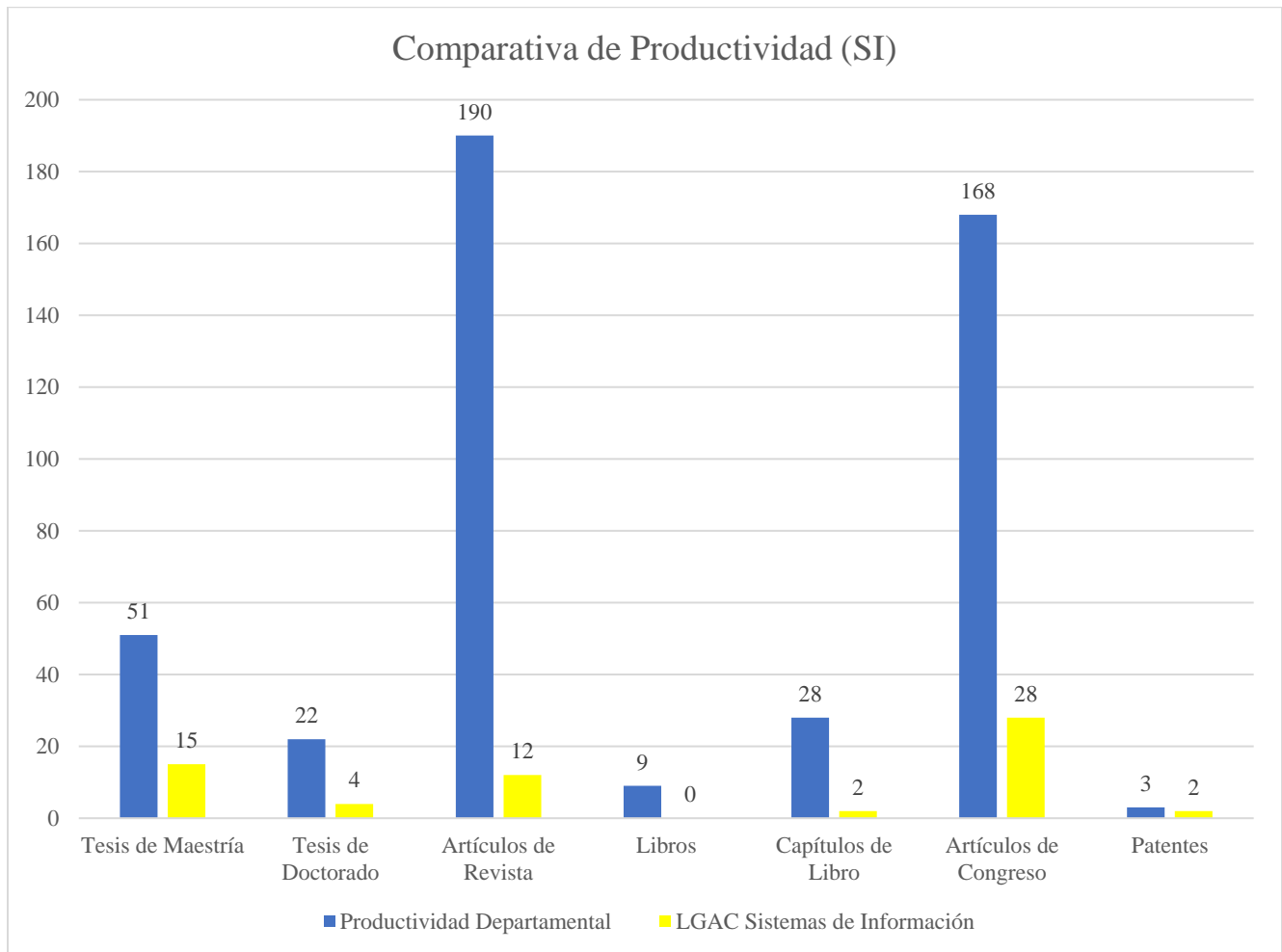


Figura 1. Contribución de la LGAC de Sistemas de Información a la productividad del Departamento de Computación de 2016 a 2020



En la Tabla 1, se muestra el desglosado por año de los diferentes tipos de productos derivados de la LGAC de Sistemas de Información. Después, se enlistan los productos organizados por tipo de producto y ordenados de manera cronológica de aparición (del más antiguo al más reciente).

<b>Año</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>Total</b>
<b>Tesis de maestría</b>	9	3	0	3	0	15
<b>Tesis de doctorado</b>	0	1	2	1	0	4
<b>Artículos de revista</b>	2	0	8	0	2	12
<b>Capítulos de libro</b>	2	0	0	0	0	2
<b>Artículos en memorias de congresos</b>	14	2	4	5	3	28
<b>Patentes Nacionales</b>	0	2	0	0	0	2

Tabla 1. Número total de productos por año generados por profesores y estudiantes de la LGAC de Sistemas de Información

### **Tesis de maestría**

1. M. en C. Luis Martín Sánchez Adame, “**Heurísticas de coherencia para el diseño de meta-interfaces de usuario**”. Fecha de Grado: 23/02/2016. Directora de Tesis: Dra. Sonia Guadalupe Mendoza Chapa.
2. M. en C. Pedro Cruz Caballero, “**Interfaces de usuario distribuidas para pruebas de Luria aplicadas en adultos mayores**”. Fecha de Grado: 03/11/2016. Directores de Tesis: Dr. Amílcar Meneses Viveros y M. en C. Erika Hernández Rubio.
3. M. en C. Luis Alfonso Marín Mota, “**Exploración 3D de Interiores Mediante Múltiples MAVS**”. Fecha de Grado: 07/12/2016. Directores de Tesis: Dra. Sonia Guadalupe Mendoza Chapa y Dr. Dominique Decouchant.
4. M. en C. Omar Israel Lara Ramírez, “**Optimización del rendimiento y extensión de la funcionalidad de cuantificación de la aplicación web de visualización molecular HTMoL a través de la implementación de funciones WebGL y un lenguaje de comandos sintácticos**”. Fecha de Grado: 07/12/2016. Directores de Tesis: Dr. Sergio Víctor Chapa Vergara y Dr. Mauricio Carrillo Tripp.
5. M. en C. Eliot Yañez Ortega, “**Ambiente de visualización de un sistema de información geográfica Web**”. Fecha de Grado: 14/12/2016. Director de Tesis: Dr. Sergio Víctor Chapa Vergara.

6. M. en C. Axel Salazar Ordoñez, “**Análisis de los dispositivos Space Navigator, Myo y Leap Motion y su evaluación en aplicaciones de software**”. Fecha de Grado: 28/09/2016. Director de Tesis: Dr. Luis Gerardo de la Fraga.

7. M. en C. José Nefi Gamboa Castañeda, “**Punto de acceso seguro en IPv6**”. Fecha de Grado: 29/11/2016. Director de Tesis: Dr. Luis Gerardo de la Fraga.

8. M. en C. Gil Alberto Díaz Balderas, “**Traductor del lenguaje de señas mexicano a texto**”. Fecha de Grado: 14/12/2016. Director de Tesis: Dr. José Guadalupe Rodríguez García.

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10. M. en C. Diana Méndez García, “**Modelo para la creación de Interfaces de usuario Multi-Modales**”. Fecha de Grado: 18/05/2017. Directores de Tesis: Dra. Sonia Guadalupe Mendoza Chapa, Dra. Beatriz Adriana González Beltrán.

11. M. en C. Ismael González Martínez, “**Marco Conceptual para la Administración del Contexto en Sistemas Colaborativos**”. Fecha de Grado: 08/12/2017. Director de Tesis: Dra. Sonia Guadalupe Mendoza Chapa.

12. M. en C. José Luis Ortigosa Flores, “**Administrador de Recursos Compartidos y Distribuidos para Trabajo Colaborativo en la Web**”. Fecha de Grado: 08/12/2017. Director de Tesis: Dra. Sonia Guadalupe Mendoza Chapa y Dr. Dominique Decouchant.

13. M. en C. Manuel Hernández León, “**Desarrollo de un chatbot inteligente, caso de estudio: alumnos y profesores de secundaria**”. Fecha de Grado: 20/02/2019. Directores de Tesis: Dra. Sonia Guadalupe Mendoza Chapa y Dr. José Guadalupe Rodríguez García.

14. M. en C. Sergio Daniel Romero García, “**Minería de datos para determinar la calidad educativa de las escuelas de nivel básico en México**”. Fecha de grado: 18/10/2019. Directores de tesis: Dr. Sergio Víctor Chapa Vergara y M. en C. Erika Hernández Rubio.

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2. Dr. Andrés Bernal Jiménez, “**Modelo Espacial-Temporal para Sistemas Dinámicos Discretos en Sistemas de Información Geográfica**”. Fecha de Grado: 26/01/2018. Director de Tesis: Dr. Sergio V. Chapa Vergara.

3. Dra. Bella Citlali Martínez Seis, “**Uso de atributos para detectar comunidades de calidad en redes sociales**”. Fecha de Grado: 23/03/2018. Directora de Tesis: Dra. Xiaou Li.

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2. Wen Yu and Xiaoou Li, “**Stability Analysis of Wireless Networked Control With Time-Varying Sampling Period**”, in *Proceedings of the 2016 IEEE 13th International Conference on Networking, Sensing, and Control (ICNSC’2016)*, IEEE Press, Mexico City, Mexico, 28-30 April, 2016.
3. Xiaoou Li, G. Liu, Jun Wang and Jiacun Wang, “**Resource Requirement Analysis for Cyclic Workflows**”, in *Proceedings of the 2016 IEEE 13th International Conference on Networking, Sensing, and Control (ICNSC’2016)*, IEEE Press, Mexico City, Mexico, 28-30 April, 2016.
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