Angelos Chatzimparmpas

Curriculum Vitae, August 2022

Contact Information

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Education

- Diploma (300 ECTS) in Computer Science (Informatics and Telecommunications Engineering) from University of Western Macedonia, Greece (2012 – 2017)
  - Diploma thesis title: Software Evolution
  - Supervisor: Dr. Stamatia Bibi (University of Western Macedonia)
  - Examiner: Dr. Panagiotis Sarigiannidis (University of Western Macedonia)
- Secondary education diploma from Ptolemaida's Lyceum No. 2, GPA: 18.1/20, Greece (2009 – 2012)

Current Employment

- PhD Candidate in Computer and Information Science with a specialization in Information Visualization and Visual Analytics at the Department of Computer Science and Media Technology, Linnaeus University, Sweden (February 2018 – present)

Previous Employments

- Visiting Scholar*, VADER Lab, Arizona State University, USA (June 2022 – August 2022)
- Member of the SME Competitiveness Partnership, Skills+ | Interreg Europe, Greece (October 2017 – March 2018)
- Web Developer (Erasmus+), Centre Tecnològic de Telecomunicacions de Catalunya (CTTC), Spain (June 2017 – August 2017)
- Teaching Assistant, University of Western Macedonia, Greece (November 2016 – May 2017)
- Computer Programmer (Internship), Web Expert LP, Greece (July 2016 – August 2016)

Research Interests

- Visual analytics for explainable AI (XAI)
- Structured tabular data classification (especially with supervised and unsupervised learning algorithms)
- Visual exploration of the inner parts and the quality of machine learning models with a specific focus on making complex ensemble learning models better understandable and explainable, as well as to provide reliable trust at the various stages in the machine learning pipeline
- Domain applications of information visualization and visual analytics, especially in healthcare and information science

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*Granted Linnaeus University's strategic mobility fund for doctoral students in 2022 and a honorarium from the Center for Accelerating Operational Efficiency (CAOE) led by Arizona State University

Publications

<u>M</u>onographs

[M1] **Angelos Chatzimparmpas**. *Software Evolution*. Diploma thesis, University of Western Macedonia, November 2017. Diploma thesis within the framework of studies for the diploma awarded by the University of Western Macedonia entitled "Informatics and Telecommunications Engineer." URL: `https://drive.google.com/file/d/0B3LxFFgmHGoGeFRpZTVHZU1LbVE/view?usp=sharing&resourcekey=0-FBrjeSav6vp9NQSC7KaYVA`.

Peer-Reviewed <u>J</u>ournal Articles

[J8] Maath Musleh, **Angelos Chatzimparmpas**, and Ilir Jusufi. Visual analysis of blow molding machine multivariate time series data *Journal of Visualization*, July 2022. `doi:10.1007/s12650-022-00857-4`.

[J7] **Angelos Chatzimparmpas**, Rafael M. Martins, Kostiantyn Kucher, and Andreas Kerren. FeatureEnVi: Visual analytics for feature engineering using stepwise selection and semi-automatic extraction approaches *IEEE Transactions on Visualization and Computer Graphics*, 28(4):1773–1791, April 2022. `doi:10.1109/TVCG.2022.3141040`.

[J6] **Angelos Chatzimparmpas**, Rafael M. Martins, Kostiantyn Kucher, and Andreas Kerren. VisEvol: Visual analytics to support hyperparameter search through evolutionary optimization. *Computer Graphics Forum*, 40(3):201–214, June 2021. `doi:10.1111/cgf.14300`.

[J5] **Angelos Chatzimparmpas**, Rafael M. Martins, Kostiantyn Kucher, and Andreas Kerren. StackGenVis: Alignment of data, algorithms, and models for stacking ensemble learning using performance metrics. *IEEE Transactions on Visualization and Computer Graphics*, 27(2):1547–1557, February 2021. `doi:10.1109/TVCG.2020.3030352`.

[J4] **Angelos Chatzimparmpas**, Rafael M. Martins, and Andreas Kerren. t-viSNE: Interactive assessment and interpretation of t-SNE projections. *IEEE Transactions on Visualization and Computer Graphics*, 26(8):2696–2714, August 2021. `doi:10.1109/TVCG.2020.2986996`.

[J3] **Angelos Chatzimparmpas**, Rafael M. Martins, Ilir Jusufi, and Andreas Kerren. A survey of surveys on the use of visualization for interpreting machine learning models. *Information Visualization*, 19(3):207–233, July 2020. `doi:10.1177/1473871620904671`.

[J2] **Angelos Chatzimparmpas**, Rafael M. Martins, Ilir Jusufi, Kostiantyn Kucher, Fabrice Rossi, and Andreas Kerren. The state of the art in enhancing trust in machine learning models with the use of visualizations. *Computer Graphics Forum*, 39(3):713–756, June 2020. `doi:10.1111/cgf.14034`.

[J1] **Angelos Chatzimparmpas** and Stamatia Bibi. Maintenance process modeling and dynamic estimations based on Bayesian networks and association rules. *Journal of Software: Evolution and Process*, 31(9), page e2163, September 2019. `doi:10.1002/smr.2163`.

Peer-Reviewed <u>C</u>onference Papers

[C4] **Angelos Chatzimparmpas**, Vilhelm Park, and Andreas Kerren. Evaluating StackGenVis with a comparative user study. In *Proceedings of the IEEE of the IEEE Pacific Visualization Symposium*, PacificVis '22, pages 161–165. IEEE, 2022. `doi:10.1109/PacificVis53943.2022.00025`.

[C3] Maath Musleh, **Angelos Chatzimparmpas**, and Ilir Jusufi. Visual analysis of industrial multivariate time series. In *Proceedings of the 14th International Symposium on Visual Information Communication and Interaction*, VINCI '21, pages 97–101. ACM, 2021. `doi:10.1145/3481549.3481557`.

[C2] **Angelos Chatzimparmpas**, Stamatia Bibi, Ioannis Zozas, and Andreas Kerren. Analyzing the evolution of JavaScript applications. In *Proceedings of the 14th International Conference on Evaluation of Novel Approaches to Software Engineering*, ENASE '19, pages 359–366. ACM, 2019. `doi:10.5220/0007727603590366`.

[C1] George Kokkonis, **Angelos Chatzimparmpas**, and Sotirios Kontogiannis. Middleware IoT protocols performance evaluation for carrying out clustered data. *2018 South-Eastern European Design Automation, Computer Engineering, Computer Networks and Society Media Conference, SEEDA_CECNSM '18, pages 1–5. IEEE, 2018. doi: 10.23919/SEEDA-CECNSM.2018.8544929.*

Peer-Reviewed <u>B</u>ook Chapters

[B1] Dimitra Papaefthimiou, Sotirios Kontogiannis, **Angelos Chatzimparmpas**, George Kokkonis, and Stavros Valsamidis. Proposed OLEA management system with farming monitoring processes for virgin olive oil production traceability and assessment. *Innovative Approaches and Applications for Sustainable Rural Development: 8th International Conference, HAICTA 2017, Selected Papers. Springer,* pages 325–353, January 2019. doi:10.1007/978-3-030-02312-6_19.

Peer-Reviewed <u>P</u>oster Papers

[P2] **Angelos Chatzimparmpas**, Rafael M. Martins, Kostiantyn Kucher, and Andreas Kerren. Empirical study: Visual analytics for comparing stacking to blending ensemble learning. In *Poster Abstracts of the 9th Swedish Workshop on Data Science*, SweDS '21, 2021.

[P1] **Angelos Chatzimparmpas**, Rafael M. Martins, and Andreas Kerren. t-viSNE: A Visual Inspector for the Exploration of t-SNE. In *Poster Abstracts of the IEEE Conference on Information Visualization*, VIS '18, 2018.

<u>O</u>ther/Miscellaneous Publications

[O1] **Angelos Chatzimparmpas**, Rafael M. Martins, Kostiantyn Kucher, and Andreas Kerren. Empirical study: Visual analytics for comparing stacking to blending ensemble learning. In *Proceedings of the 23rd International Conference on Control Systems and Computer Science*, CSCS '21, pages 1–8. IEEE, 2021. doi:10.1109/CSCS52396.2021.00008. Invited Paper.

External Research Funding Applications

Involvement in Preparation of Previous and Ongoing Proposals

- Assistant: WASP doctoral project application, 2022
- Assistant: WASP doctoral project application, 2021

Distinctions and Awards

- Best short paper award at VINCI '21 **[C3]**. URL: https://vinci-conf.org/2021/
- Judge for the 3rd regional competition of Western Macedonia in educational robotics entitled "Vehicles and Transport of Tomorrow" (March 2017). URL: http://edurobot.uowm.gr/
- Coach of the Hyperion Robotics team in the World Robot Olympiad in India (November 2016). URL: http://www.wro2016india.org/

Other Academic Qualifications

Academic Community Assignments

- PC member for IEEE VIS '22 Short Papers

Referee Assignments

- Journals
  - IEEE TVCG (3 articles in 2021)
  - JMLR (1 article in 2021)
- Conferences
  - IEEE VIS '22 (3 papers)
  - EuroVis '22 (2 papers)
  - IEEE VIS '21 (1 paper)
  - CD-MAKE '21 (1 paper)
  - EuroVis '21 (2 papers)
  - VINCI '20 (1 paper)
  - CD-MAKE '19 (1 paper)

Participation in Conferences and Workshops

- IEEE VIS '22 conference in Oklahoma City, October 2022 (future event), invited article **[J7]**
- IEEE PacificVis '22 (online), April 2022, article presentation **[C4]**
- SweDS '21 workshop (online), December 2021, poster presentation **[O1, P2]**
- Big Data Conference at Linnaeus University in Växjö, December 2021, attendance
- IEEE VIS '21 conference (online), October 2021, attendance
- EuroVis '21 conference (online), June 2021, article presentation **[J6]**
- Big Data Conference at Linnaeus University in Växjö, December 2020, invited speaker
- IEEE VIS '20 conference (online), October 2020, invited article + article presentation **[J4, J5]**
- IEEE PacificVis '20 (online), June 2020, attendance
- EuroVis '20 conference (online), May 2020, article presentation **[J2]**
- Big Data Conference at Linnaeus University in Växjö, December 2019, attendance
- Big Data Conference at Linnaeus University in Växjö, December 2018, poster presentation **[P1]**
- IEEE VIS '18 conference in Berlin, October 2018, poster presentation **[P1]**
- VINCI '18 conference in Växjö, August 2018, attendance
- ECESCON 7 in Thessaloniki, April 2014, attendance
- Internet Security and Internet Safety in Thessaloniki, November 2013, attendance

Conference Presentations and Seminar Talks

- FeatureEnVi: Visual analytics for feature engineering using stepwise selection and semi-automatic extraction approaches. Invited conference presentation at IEEE VIS '22, Oklahoma City, USA, XX.10.2022 (future event). **[J7]**
- Visual analytics for explainable and trustworthy machine learning. Talk at VADER Lab, Arizona State University, Tempe, USA, 24.06.2022.
- t-viSNE: Interactive assessment and interpretation of t-SNE projections. Tool demonstration at Dagstuhl Seminar 22191 "Visual Text Analytics", Schloss Dagstuhl – Leibniz Center for Informatics (LZI), Wadern, Germany, 15.05.2022. **[J4]**
- Evaluating StackGenVis with a comparative user study. Conference presentation at IEEE PacificVis '22, online, 12.04.2022. **[C4]**
- Empirical study: Visual analytics for comparing stacking to blending ensemble learning. Workshop presentation at the 9th Swedish National Workshop on Data Science (SweDS), online, 03.12.2021. **[O1, P2]**

- Visual analytics for explainable machine learning in a nutshell. Talk at IEEE VIS 2021 Sweden Satellite event, Linköping University, Norrköping, Sweden, 27.10.2021.
- Opening the magic box of artificial intelligence with the use of visualizations. Talk at European Researchers' Night Sweden's science festival, online, 23.09.2021.
- VisEvol: Visual analytics to support hyperparameter search through evolutionary optimization. Conference presentation at EuroVis '21, online, 16.06.2021. **[J6]**
- t-viSNE: Interactive assessment and interpretation of t-SNE projections. Invited conference presentation at IEEE VIS '20, online, 30.10.2020. **[J4]**
- StackGenVis: Alignment of data, algorithms, and models for stacking ensemble learning using performance metrics. Conference presentation at IEEE VIS '20, online, 29.10.2020. **[J5]**
- The state of the art in enhancing trust in machine learning models with the use of visualizations. Conference presentation at EuroVis '20, online, 27.05.2020. **[J2]**
- t-viSNE: A visual inspector for the exploration of t-SNE. Poster presentation at the 4th annual Big Data Conference at Linnaeus University, Växjö, Sweden, 29.11.2018. **[P1]**
- t-viSNE: A visual inspector for the exploration of t-SNE. Poster presentation at IEEE VIS '18, Berlin, Germany, 24.10.2018. **[P1]**
- Software Evolution. Diploma thesis presentation (in Greek) at University of Western Macedonia, Kozani, Greece, 11.11.2017.
- Robotics in the classroom. Talk (in Greek) on behalf of Hyperion Robotics at University of Western Macedonia, Kozani, Greece, 10.12.2016.

Invited Talks

- 2020 DISA PhD Talks: Interdisciplinary Exploration of Forestry Data Using Machine Learning and Immersive Visualization. Invited talk at Big Data Conference, Linnaeus University, online, 03.12.2020.

Professional Organizations Membership

- Institute of Electrical and Electronics Engineers (IEEE)
  - Student member (October 2012 – present)
- Association for Computing Machinery (ACM)
  - Student member (March 2018 – present)

Member of Research Groups

- Information and Software Visualization (ISOVIS) group. URL: `https://cs.lnu.se/isovis/`
- Data Intensive Sciences and Applications (DISA) research centre at Linnaeus University. URL: `https://lnu.se/en/research/searchresearch/linnaeus-university-centre-for-data-intensive-sciences-and-applications/`
- Laboratory team of Distributed Microcomputer Systems at University of Ioannina. URL: `https://kalipso.math.uoi.gr/microlab/en/`
- Hyperion Robotics — The robotics team of the University of Western Macedonia. URL: `https://robotics.uowm.gr/`

Pedagogical Qualifications

Pedagogical Training

- Constructive Alignment in Practice seminar at Linnaeus University (2022; taken as part of PhD studies)
- Compulsory Higher Education Teacher Training course (15 hp) at Linnaeus University (2020; taken as part of PhD studies)

Teaching Experience

Courses at Linnaeus University:
- 2022, fall term:
  - 4DV805 Information Visualization (teaching assistant)
  - 4DV806 Advanced Information Visualization and Applications (teaching assistant)
- 2021, fall term:
  - 1DV801 Information Visualization in Practice (teaching assistant)
  - 4DV805 Information Visualization (teaching assistant)
  - 4DV806 Advanced Information Visualization and Applications (teaching assistant)
  - 4ME501 Programming for Digital Humanities (teaching assistant)
  - 4ME502 Programming for Digital Humanities (teaching assistant)
- 2021, spring term:
  - 1ME326 Web Technology 6 (guest lecturer)
- 2020, fall term:
  - 4DV805 Information Visualization (teaching assistant)
  - 4DV806 Advanced Information Visualization and Applications (teaching assistant)
  - 4ME501 Programming for Digital Humanities (teaching assistant)
  - 4ME502 Programming for Digital Humanities (teaching assistant)
  - 1DV516 Algorithms and Advanced Data Structures (teaching assistant)
- 2020, spring term:
  - 1ME326 Web Technology 6 (guest lecturer)
  - 4DV800 Information Visualization (teaching assistant)
  - 4DV801 Applied Information Visualization (teaching assistant)
  - 1IK173 Quality Assurance in Information Systems (teaching assistant)
  - 1DV437 Introduction to Game Programming (teaching assistant)
- 2019, fall term:
  - 4ME501 Programming for Digital Humanities (teaching assistant)
  - 1DV516 Algorithms and Advanced Data Structures (teaching assistant)
- 2019, spring term:
  - 4DV800 Information Visualization (teaching assistant)
  - 4DV801 Applied Information Visualization (teaching assistant)
  - 1IK173 Quality Assurance in Information Systems (teaching assistant)
  - 1DV437 Introduction to Game Programming (teaching assistant)
- 2018, fall term:
  - 4ME501 Programming for Digital Humanities (teaching assistant)
  - 1DV516 Algorithms and Advanced Data Structures (teaching assistant)

Courses at University of Western Macedonia:
- 2017, spring term:
  - Cloud Computing (teaching assistant)
  - Computer Networks II (teaching assistant)
  - Electronics I (teaching assistant)
  - Communication Systems II (teaching assistant)
- 2016, fall term:
  - Introduction to Structured Programming (teaching assistant)

- – Object Oriented Programming II (teaching assistant)
- – Electronics II (teaching assistant)
- – Communication Systems I (teaching assistant)

Supervision Experience (Bachelor's and Master's Thesis Projects)

- Ilya Ploshchik. Visually-assisted performance evaluation of metamodels in stacking ensemble learning. Bachelor's thesis, 15 hp, co-supervised with Prof. Dr. Andreas Kerren. Linnaeus University, ongoing.
- Vilhelm Park. Comparative evaluation of visualization tools for stacking ensemble learning. Bachelor's thesis, 15 hp, co-supervised with Prof. Dr. Andreas Kerren. Linnaeus University, ongoing.

Examining Committee Experience (Bachelor's and Master's Thesis Projects)

- **Opponent for (assigned as part of a PhD course)**: Imran Shokat. Computational Analyses of Scientific Publications Using Raw and Manually Curated Data with Applications to Text Visualization. Master's thesis, 30 hp, supervised by Prof. Dr. Andreas Kerren. Linnaeus University, December 2018.
- **Reviewer for (assigned as part of a PhD course)**: Chris Kopetschny. Towards Technical Value Analysis of Software. Master's thesis, 15 hp, supervised by Prof. Dr. Welf Löwe. Linnaeus University, November 2018.
- **Reviewer for (assigned as part of a PhD course)**: Kay Kühne. Interactive Multiscale Visualization of Large, Multi-dimensional Datasets. Master's thesis, 15 hp, supervised by Prof. Dr. Andreas Kerren. Linnaeus University, August 2018.
- **Opponent for (assigned as part of a PhD course)**: Andrii Chernenko. Facilitating comprehension of Swift programs. Master's thesis, 15 hp, supervised by Prof. Dr. Welf Löwe. Linnaeus University, June 2018.

Language Skills

- Native Greek
- Advanced English
- Basic German

Additional Training

Courses at Linnaeus University[†]

- Paper Reviews in 2022, 5 hp (not registered yet)
- Paper Reviews in 2021, 1 hp (January 2022)
- Paper Reviews in 2020, 7 hp (January 2021)
- Compulsory Higher Education Teacher Training, 15 hp (June 2020)
- Paper Reviews in 2019, 2 hp (January 2020)
- 3D-Graphics, 7.5 hp (May 2019)
- Python for Research, 7.5 hp (April 2019)
- 5th International Winter School on Big Data, 3 hp (March 2019)
- Graph Drawing, 7.5 hp (January 2019)
- Computer Graphics, 7.5 hp (December 2018)
- Critical Review of Scientific Reports, 3 hp (November 2018)
- English Scientific Writing for Postgraduates, 3 hp (October 2018)
- Multivariate Network Visualization, 7.5 hp (June 2018)
- Solving Problems with Visual Analytics, 7.5 hp (June 2018)

[†]Including the courses in the PhD degree

- Applied Information Visualization, 7.5 hp (June 2018)
- Philosophy of Science for Doctoral Students, 4 hp (June 2018)
- Information Visualization, 7.5 hp (March 2018)
- Machine Learning, 7.5 hp (February 2018)

Online Education Courses‡

- Introduction to Biomedical Imaging (edX, May 2016)

Attended Seminars and Tutorials

- Dagstuhl Seminar 22191 "Visual Text Analytics" (by invitation only). Seminar at Schloss Dagstuhl – Leibniz Center for Informatics (LZI). URL: `https://www.dagstuhl.de/en/program/calendar/semhp/?semnr=22191`
- IEEE VIS Full Paper Review Model and Process: Becoming a (Better) Program Committee Member. Tutorial at IEEE VIS 2021. URL: `http://ieeevis.org/year/2021/info/tutorials#PRM`
- Thierry Driver. The Beautiful Science of Data Visualisation. Tableau Workshop at Linnaeus University, 2018. URL: `https://lnu.se/en/meet-linnaeus-university/current/events/2018/the-beautiful-science-of-data-visualisation/`
- Youth Entrepreneurship. Seminar at University of Western Macedonia.
- Innovation and Entrepreneurship in Education. Seminar at University of Western Macedonia.

Language Training

- Certificate of Proficiency in English, C2 Level (University of Michigan, May 2017)
- Goethe-Zertifikat, B1 Level (Goethe-Institut, June 2009)

Other Qualifications and Certifications

- Radio amateur license, SV2QLZ callsign (Greece, March 2013)
- Driving license, category B (Greece, April 2014)

Software Development Experience

- JavaScript (jQuery; D3, Plotly; WebGL, ThreeJS; Vue)
- Python (NumPy, SciPy, Pandas; Matplotlib, Plotly, Seaborn; scikit-learn; Flask)
- Web design (HTML5, CSS3, Bootstrap)
- Database programming (MongoDB, MySQL)
- Version control systems (SVN, Git)
- Java (JUnit5, Mockito)
- Shell-scripting (Bash)
- Scientific computation environments (Octave, Matlab)

Software Usage Experience

- GNU/Linux, Microsoft Windows, macOS power user
- LaTeX, Microsoft Office, GIMP, Inkscape, Gephi, OBS, iMovie proficient user

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‡Excluding the courses in the PhD degree

Volunteering and Other Activities

- Student volunteer captain at IEEE VIS '22
- Collector of the abstracts and editor of the report for Dagstuhl Seminar 22191 "Visual Text Analytics"
- Student volunteer captain at IEEE VIS '21
- Student volunteer captain at EuroVis '21
- Student volunteer at IEEE VIS '20
- Student volunteer at IEEE VIS '18
- Student volunteer at VINCI '18
- Robotics teacher for the Non-Profit Civil Partnership "Siampanopoulos, o Kozanitis" in Greece (October 2017 – January 2018)
- Participation in Business Talents Competition in Greece (online; 2015)
- Participation in IEEEXtreme 24-Hour Programming Competitions (online; 7.0 in 2013 and 8.0 in 2014)

Links

- Homepage @ LNU: `https://lnu.se/en/staff/angelos.chatzimparmpas/`
- ORCID profile: `https://orcid.org/0000-0002-9079-2376`
- ISOVIS group: `https://cs.lnu.se/isovis/`
- Google Scholar profile: `https://scholar.google.com/citations?user=JJfPNA4AAAAJ`
- ResearchGate profile: `https://www.researchgate.net/profile/Angelos_Chatzimparmpas`
- LinkedIn profile: `https://www.linkedin.com/in/angelos-chatzimparmpas/`
- GitHub profile: `https://github.com/angeloschatzimparmpas`