Course project overview

Course project is the *main* part of your coursework! Project topic should be related to network science and should go beyond this course, while projects can also borrow from other courses. Students must work in groups of three, whereas other group sizes will be allowed only in exceptional cases.

Students will be encouraged to submit an extended paper describing their course project to Student Computer Science Research Symposium [SCORES '22](), online journal [Uporabna Informatika](), preprint server [arXiv.org](), make their work publicly available or other.

Project types

- **[theoretical]** analytical derivation of rigorous theoretical results
- **[empirical]** empirical evaluation of methods, models or networks
- **[methods]** design of novel or improved models, methods or algorithms
- **[coding]** scalable implementation of popular methods or algorithms
- **[community]** contribution to Slovenian network science community
- **[contribution]** relevant contribution to courses INA, MLG or ANTS

Examples of projects

- Marc, T., & Šubelj, L. (2018). [Convexity in complex networks](). *Network Science*, **6**(2), 176–203.
- Naglić, L., & Šubelj, L. (2019). [War pact model of shrinking networks](). *PLoS ONE*, **14**(10), e0223480.
- Zavrtanik, V., & Šubelj, L. (2018). [Community detection in Slovene public spending](). *Uporabna Informatika*, **26**(3), 107–117.
- Stavanja, J., Klemen, M., & Šubelj, L. (2020). [Predicting kills in Game of Thrones using network analysis](). *Uporabna Informatika*, **28**(2), 55–65.
- Svete, A., Hostnik, J., & Šubelj, L. (2020). [It is not just about the melody: How Europe votes for its favorite songs](). *Uporabna Informatika*, **28**(2), 66–84.
- Poštuvan, T., Salkić, S., & Šubelj, L. (2021). [Learning-based link prediction analysis for Facebook100 network](). *Uporabna Informatika*, **29**(2), 83–94.
- Stropnik, V., Đuranović, V., & Oražem, M. (2021). [Effect of key match events on football passmaps](). e-print *arxiv:2108.05343*, pp. 5.

[Project proposal]()

Project proposal should consist of $\approx$ **1 page** in PNAS format (use this [template]()). It should be submitted through Gradescope as group submission (entry code 6PDZD3) and is due on **Apr 29th** at 11:59pm, while

late days expire on **May 2nd** at 11:00am.

Proposal should include title and short abstract, problem definition, motivation and background, brief overview of relevant literature, project proposal including data, methods, algorithms, results and contributions, and description of preliminary work.

[Project report](#)

Project report should consist of $\leq$ **3 pages** in PNAS format (use this [template](#)). It should be submitted through Gradescope as group submission (entry code 6PDZD3) and is due on **May 27th** at 11:59pm, while late days expire on **May 30th** at 11:00am.

See template for details.

Project steps

1. read enough literature
2. decide on your project domain
3. find relevant data and check it
4. decide on your project problem
5. clearly state your project hypotheses
6. select appropriate tools and techniques
7. conduct preliminary analysis of hypotheses
8. find related papers and read them

- analyze your hypotheses
- refine your hypotheses
- iterate until deadline

Project tips

- know your project domain
- assume data you can actually get
- make hypotheses as simple as possible
- use simplest methods and techniques possible
- make results practically useful and valuable
- make project completion feasible
- work and write simultaneously
- start working on project early