

Title 3

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A clear and well-documented \LaTeX document is presented as an article formatted for publication by ACM in a conference proceedings or journal publication. Based on the “acmart” document class, this article presents and explains many of the common variations, as well as many of the formatting elements an author may use in the preparation of the documentation of their work.

CCS Concepts: • **Do Not Use This Code** → **Generate the Correct Terms for Your Paper**; *Generate the Correct Terms for Your Paper*; Generate the Correct Terms for Your Paper; Generate the Correct Terms for Your Paper.

Additional Key Words and Phrases: Do, Not, Use, This, Code, Put, the, Correct, Terms, for, Your, Paper

ACM Reference Format:

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1 Introduction

ACM’s consolidated article template, introduced in 2017, provides a consistent \LaTeX style for use across ACM publications, and incorporates accessibility and metadata-extraction functionality necessary for future Digital Library endeavors. Numerous ACM and SIG-specific \LaTeX templates have been examined, and their unique features incorporated into this single new template.

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If you are new to publishing with ACM, this document is a valuable guide to the process of preparing your work for publication. If you have published with ACM before, this document provides insight and instruction into more recent changes to the article template.

The “acmart” document class can be used to prepare articles for any ACM publication — conference or journal, and for any stage of publication, from review to final “camera-ready” copy, to the author’s own version, with *very* few changes to the source.

2 Background and Related Work

Software reuse is a broad term, that refers to the practice of reusing previously written code, rather than coding from scratch. It is one of the key practices of software engineering. It is in fact such an important part of software engineering, that one of the ways to measure the quality of software is by its ‘Reusability’(cite ref to reusability QA here) - i.e. the degree to which the application or its components can be reused. There are many different ways to do reuse in software engineering. Software libraries and frameworks are good examples of software that are intended to be reused. Developers may also scour the internet for things such as open-source software, or code snippets from websites like StackOverFlow, which can be reused.

There are multiple benefits to software reuse, depending on how the reuse is performed. Firstly, reuse is a great time-saver. Not only can the developer avoid the task of writing code itself, they may also be able to avoid figuring out the logic of the software, and testing the reused software (assuming the software is from a trusted source). Another benefit is found through modularity. By breaking down a software system into smaller modules, the logic behind features or functions can be contained within a module, and can be tested thoroughly. (add more benefits?).

Despite reuse being an important practice in software engineering, there is still a limited focus on this practice when it comes to low-code development platforms (LCDP). –from here: what reuse is there for low-code? What research? IN GENERAL – Then, what tools? examples of how tools tackle reuse – Then, what tools for blocks and robots? How do they tackle reuse? What are their strengths/weaknesses/limitations? MAKE SURE TO MENTION BY NAME!! – Show the tool we’ll be working on (what does it do for reuse, and weaknesses). – Based on all that, what is our idea? What gap is it, we’re addressing and how? Despite the growing focus on low-code platforms, there is still a limited focus on the reuse of models. Some low-code development platforms (LCDP) offer catalogs of reusable artifacts, though these are often generic in nature[9]. Some proposed tools focus on providing recommendations for models to the user, with these recommendations being based on a pre-defined collection of models. Notably, two of these tools focus on collections of models created by ‘experts’[34][25]. On the other hand, some existing LCDPs offer the user the ability to create their own models - for example by defining a new block in a block-based tool [41].

Block-based programming is a modality commonly found in imperative programming tools for end-users, blocks are typically used to describe imperative, story like sequences of commands, like animations or robot and manufacturing steps[42]. Moreover, BBP is an increasingly widespread approach to programming that uses a programming-command-as-puzzle-piece metaphor to help students understand how and where commands can be used [8]. Lin and Weintrop (2021) noted that most existing research on block-based programming focuses on supporting the transition to text-based languages rather than exploring how features within BBP environments [33]—such as abstraction or reuse—can enhance learning outcomes . In contrast, our work emphasizes guided abstraction, helping users understand and practice modular design directly within block-based environments.

To address these limitations, previous works have focused on helping users recognize repetitive code patterns and encouraging the encapsulation of logic into reusable abstractions. For example, some systems employ pattern

recognition or code-clone detection techniques [29][52]. However, current platforms[10] tend to provide features for block composition rather than promoting reuse, and none offer explicit visualizations that highlight reusable components. The absence of such features represents a barrier to achieving higher levels of efficiency and modular design.

Research also indicates that block based programming environments should guide the end users towards good code organization as many may lack the necessary knowledge or may become stuck due to errors.[15] Although block based programming tools like Blockly were invented to teach programming to beginners by simple examples, Mayr-Dorn et al. mention that it is possible to express even large and highly complex real-world robot programs with the language concepts offered by these kind of block-based tools. [35]

3 Template Overview

As noted in the introduction, the “acmart” document class can be used to prepare many different kinds of documentation — a double-anonymous initial submission of a full-length technical paper, a two-page SIGGRAPH Emerging Technologies abstract, a “camera-ready” journal article, a SIGCHI Extended Abstract, and more — all by selecting the appropriate *template style* and *template parameters*.

This document will explain the major features of the document class. For further information, the *LaTeX User’s Guide* is available from <https://www.acm.org/publications/proceedings-template>.

3.1 Template Styles

The primary parameter given to the “acmart” document class is the *template style* which corresponds to the kind of publication or SIG publishing the work. This parameter is enclosed in square brackets and is a part of the `documentclass` command:

```
\documentclass[STYLE]{acmart}
```

Journals use one of three template styles. All but three ACM journals use the `acmsmall` template style:

- `acmsmall`: The default journal template style.
- `acmlarge`: Used by JOCCH and TAP.
- `acmtog`: Used by TOG.

The majority of conference proceedings documentation will use the `acmconf` template style.

- `sigconf`: The default proceedings template style.
- `sigchi`: Used for SIGCHI conference articles.
- `sigplan`: Used for SIGPLAN conference articles.

3.2 Template Parameters

In addition to specifying the *template style* to be used in formatting your work, there are a number of *template parameters* which modify some part of the applied template style. A complete list of these parameters can be found in the *LaTeX User’s Guide*.

Frequently-used parameters, or combinations of parameters, include:

- `anonymous,review`: Suitable for a “double-anonymous” conference submission. Anonymizes the work and includes line numbers. Use with the `\acmSubmissionID` command to print the submission’s unique ID on each page of the work.
- `authorversion`: Produces a version of the work suitable for posting by the author.
- `screen`: Produces colored hyperlinks.

This document uses the following string as the first command in the source file:

```
\documentclass[manuscript,screen,review]{acmart}
```

4 Modifications

Modifying the template — including but not limited to: adjusting margins, typeface sizes, line spacing, paragraph and list definitions, and the use of the `\vspace` command to manually adjust the vertical spacing between elements of your work — is not allowed.

Your document will be returned to you for revision if modifications are discovered.

5 Typefaces

The “acmart” document class requires the use of the “Libertine” typeface family. Your \TeX installation should include this set of packages. Please do not substitute other typefaces. The “lmodern” and “ltimes” packages should not be used, as they will override the built-in typeface families.

6 Title Information

The title of your work should use capital letters appropriately - <https://capitalizemytitle.com/> has useful rules for capitalization. Use the `title` command to define the title of your work. If your work has a subtitle, define it with the `subtitle` command. Do not insert line breaks in your title.

If your title is lengthy, you must define a short version to be used in the page headers, to prevent overlapping text. The `title` command has a “short title” parameter:

```
\title[short title]{full title}
```

7 Authors and Affiliations

Each author must be defined separately for accurate metadata identification. As an exception, multiple authors may share one affiliation. Authors’ names should not be abbreviated; use full first names wherever possible. Include authors’ e-mail addresses whenever possible.

Grouping authors’ names or e-mail addresses, or providing an “e-mail alias,” as shown below, is not acceptable:

```
\author{Brooke Aster, David Mehldau}
\email{dave,judy,steve@university.edu}
\email{firstname.lastname@phillips.org}
```

The `authornote` and `authornotemark` commands allow a note to apply to multiple authors — for example, if the first two authors of an article contributed equally to the work.

If your author list is lengthy, you must define a shortened version of the list of authors to be used in the page headers, to prevent overlapping text. The following command should be placed just after the last `\author{}` definition:

```
Manuscript submitted to ACM
```

`\renewcommand{\shortauthors}{McCartney, et al.}`

Omitting this command will force the use of a concatenated list of all of the authors' names, which may result in overlapping text in the page headers.

The article template's documentation, available at <https://www.acm.org/publications/proceedings-template>, has a complete explanation of these commands and tips for their effective use.

Note that authors' addresses are mandatory for journal articles.

8 Rights Information

Authors of any work published by ACM will need to complete a rights form. Depending on the kind of work, and the rights management choice made by the author, this may be copyright transfer, permission, license, or an OA (open access) agreement.

Regardless of the rights management choice, the author will receive a copy of the completed rights form once it has been submitted. This form contains \LaTeX commands that must be copied into the source document. When the document source is compiled, these commands and their parameters add formatted text to several areas of the final document:

- the "ACM Reference Format" text on the first page.
- the "rights management" text on the first page.
- the conference information in the page header(s).

Rights information is unique to the work; if you are preparing several works for an event, make sure to use the correct set of commands with each of the works.

The ACM Reference Format text is required for all articles over one page in length, and is optional for one-page articles (abstracts).

9 CCS Concepts and User-Defined Keywords

Two elements of the "acmart" document class provide powerful taxonomic tools for you to help readers find your work in an online search.

The ACM Computing Classification System — <https://www.acm.org/publications/class-2012> — is a set of classifiers and concepts that describe the computing discipline. Authors can select entries from this classification system, via <https://dl.acm.org/ccs/ccs.cfm>, and generate the commands to be included in the \LaTeX source.

User-defined keywords are a comma-separated list of words and phrases of the authors' choosing, providing a more flexible way of describing the research being presented.

CCS concepts and user-defined keywords are required for all articles over two pages in length, and are optional for one- and two-page articles (or abstracts).

10 Sectioning Commands

Your work should use standard \LaTeX sectioning commands: `\section`, `\subsection`, `\subsubsection`, `\paragraph`, and `\subparagraph`. The sectioning levels up to `\subsubsection` should be numbered; do not remove the numbering from the commands.

Simulating a sectioning command by setting the first word or words of a paragraph in boldface or italicized text is **not allowed**.

Table 1. Frequency of Special Characters

Non-English or Math	Frequency	Comments
Ø	1 in 1,000	For Swedish names
π	1 in 5	Common in math
\$	4 in 5	Used in business
Ψ_1^2	1 in 40,000	Unexplained usage

Table 2. Some Typical Commands

Command	A Number	Comments
<code>\author</code>	100	Author
<code>\table</code>	300	For tables
<code>\table*</code>	400	For wider tables

Below are examples of sectioning commands.

10.1 Subsection

This is a subsection.

10.1.1 Subsubsection. This is a subsubsection.

Paragraph. This is a paragraph.

Subparagraph This is a subparagraph.

11 Tables

The “acmart” document class includes the “booktabs” package — <https://ctan.org/pkg/booktabs> — for preparing high-quality tables.

Table captions are placed *above* the table.

Because tables cannot be split across pages, the best placement for them is typically the top of the page nearest their initial cite. To ensure this proper “floating” placement of tables, use the environment **table** to enclose the table’s contents and the table caption. The contents of the table itself must go in the **tabular** environment, to be aligned properly in rows and columns, with the desired horizontal and vertical rules. Again, detailed instructions on **tabular** material are found in the *L^AT_EX User’s Guide*.

Immediately following this sentence is the point at which Table 1 is included in the input file; compare the placement of the table here with the table in the printed output of this document.

To set a wider table, which takes up the whole width of the page’s live area, use the environment **table*** to enclose the table’s contents and the table caption. As with a single-column table, this wide table will “float” to a location deemed more desirable. Immediately following this sentence is the point at which Table 2 is included in the input file; again, it is instructive to compare the placement of the table here with the table in the printed output of this document.

Always use `midrule` to separate table header rows from data rows, and use it only for this purpose. This enables assistive technologies to recognise table headers and support their users in navigating tables more easily.

12 Math Equations

You may want to display math equations in three distinct styles: inline, numbered or non-numbered display. Each of the three are discussed in the next sections.

12.1 Inline (In-text) Equations

A formula that appears in the running text is called an inline or in-text formula. It is produced by the **math** environment, which can be invoked with the usual `\begin . . . \end` construction or with the short form `$. . . $`. You can use any of the symbols and structures, from α to ω , available in \LaTeX [31]; this section will simply show a few examples of in-text equations in context. Notice how this equation: $\lim_{n \rightarrow \infty} x = 0$, set here in in-line math style, looks slightly different when set in display style. (See next section).

12.2 Display Equations

A numbered display equation—one set off by vertical space from the text and centered horizontally—is produced by the **equation** environment. An unnumbered display equation is produced by the **displaymath** environment.

Again, in either environment, you can use any of the symbols and structures available in \LaTeX ; this section will just give a couple of examples of display equations in context. First, consider the equation, shown as an inline equation above:

$$\lim_{n \rightarrow \infty} x = 0 \tag{1}$$

Notice how it is formatted somewhat differently in the **displaymath** environment. Now, we'll enter an unnumbered equation:

$$\sum_{i=0}^{\infty} x + 1$$

and follow it with another numbered equation:

$$\sum_{i=0}^{\infty} x_i = \int_0^{\pi+2} f \tag{2}$$

just to demonstrate \LaTeX 's able handling of numbering.

13 Figures

The “figure” environment should be used for figures. One or more images can be placed within a figure. If your figure contains third-party material, you must clearly identify it as such, as shown in the example below.

Your figures should contain a caption which describes the figure to the reader.

Figure captions are placed *below* the figure.

Every figure should also have a figure description unless it is purely decorative. These descriptions convey what's in the image to someone who cannot see it. They are also used by search engine crawlers for indexing images, and when images cannot be loaded.

A figure description must be unformatted plain text less than 2000 characters long (including spaces). **Figure descriptions should not repeat the figure caption – their purpose is to capture important information that is not already provided in the caption or the main text of the paper.** For figures that convey important and complex new information, a short text description may not be adequate. More complex alternative descriptions can be placed in an appendix and referenced in a short figure description. For example, provide a data table capturing the information in



Fig. 1. 1907 Franklin Model D roadster. Photograph by Harris & Ewing, Inc. [Public domain], via Wikimedia Commons. (<https://goo.gl/VLCRBB>).

a bar chart, or a structured list representing a graph. For additional information regarding how best to write figure descriptions and why doing this is so important, please see <https://www.acm.org/publications/taps/describing-figures/>.

13.1 The “Teaser Figure”

A “teaser figure” is an image, or set of images in one figure, that are placed after all author and affiliation information, and before the body of the article, spanning the page. If you wish to have such a figure in your article, place the command immediately before the `\maketitle` command:

```
\begin{teaserfigure}
  \includegraphics[width=\textwidth]{sampleteaser}
  \caption{figure caption}
  \Description{figure description}
\end{teaserfigure}
```


14 Citations and Bibliographies

The use of Bib \TeX for the preparation and formatting of one’s references is strongly recommended. Authors’ names should be complete — use full first names (“Donald E. Knuth”) not initials (“D. E. Knuth”) — and the salient identifying features of a reference should be included: title, year, volume, number, pages, article DOI, etc.

The bibliography is included in your source document with these two commands, placed just before the `\end{document}` command:

```
\bibliographystyle{ACM-Reference-Format}
\bibliography{bibfile}
```

where “bibfile” is the name, without the “.bib” suffix, of the Bib \TeX file.

Citations and references are numbered by default. A small number of ACM publications have citations and references formatted in the “author year” style; for these exceptions, please include this command in the **preamble** (before the command “`\begin{document}`”) of your \LaTeX source:

```
\citestyle{acmauthoryear}
```

Some examples. A paginated journal article [2], an enumerated journal article [14], a reference to an entire issue [13], a monograph (whole book) [30], a monograph/whole book in a series (see 2a in spec. document) [22], a divisible-book such as an anthology or compilation [17] followed by the same example, however we only output the series if the volume number is given [18] (so Editor00a’s series should NOT be present since it has no vol. no.), a chapter in a divisible book [48], a chapter in a divisible book in a series [16], a multi-volume work as book [28], a couple of articles in a proceedings (of a conference, symposium, workshop for example) (paginated proceedings article) [3, 20], a proceedings article with all possible elements [47], an example of an enumerated proceedings article [19], an informally published work [21], a couple of preprints [6, 11], a doctoral dissertation [12], a master’s thesis: [4], an online document / world wide web resource [1, 38, 49], a video game (Case 1) [37] and (Case 2) [36] and [32] and (Case 3) a patent [46], work accepted for publication [43], ‘YYYYb’-test for prolific author [44] and [45]. Other cites might contain ‘duplicate’ DOI and URLs (some SIAM articles) [27]. Boris / Barbara Beeton: multi-volume works as books [24] and [23]. A presentation [40]. An article under review [7]. A couple of citations with DOIs: [26, 27]. Online citations: [49–51]. Artifacts: [39] and [5].

15 Acknowledgments

Identification of funding sources and other support, and thanks to individuals and groups that assisted in the research and the preparation of the work should be included in an acknowledgment section, which is placed just before the reference section in your document.

This section has a special environment:

```
\begin{acks}
...
\end{acks}
```

so that the information contained therein can be more easily collected during the article metadata extraction phase, and to ensure consistency in the spelling of the section heading.

Authors should not prepare this section as a numbered or unnumbered `\section`; please use the “acks” environment.

16 Appendices

If your work needs an appendix, add it before the “`\end{document}`” command at the conclusion of your source document.

Start the appendix with the “`appendix`” command:

```
\appendix
```

and note that in the appendix, sections are lettered, not numbered. This document has two appendices, demonstrating the section and subsection identification method.

17 Multi-language papers

Papers may be written in languages other than English or include titles, subtitles, keywords and abstracts in different languages (as a rule, a paper in a language other than English should include an English title and an English abstract). Use `language=...` for every language used in the paper. The last language indicated is the main language of the paper. For example, a French paper with additional titles and abstracts in English and German may start with the following command

```
\documentclass[sigconf, language=english, language=german,
               language=french]{acmart}
```

The title, subtitle, keywords and abstract will be typeset in the main language of the paper. The commands `\translatedXXX`, `XXX` begin title, subtitle and keywords, can be used to set these elements in the other languages. The environment `translatedabstract` is used to set the translation of the abstract. These commands and environment have a mandatory first argument: the language of the second argument. See `sample-sigconf-i13n.tex` file for examples of their usage.

18 SIGCHI Extended Abstracts

The “`sigchi-a`” template style (available only in \LaTeX and not in Word) produces a landscape-orientation formatted article, with a wide left margin. Three environments are available for use with the “`sigchi-a`” template style, and produce formatted output in the margin:

sidebar: Place formatted text in the margin.

marginfigure: Place a figure in the margin.

marginfigure: Place a figure in the margin.

marginfigure: Place a figure in the margin.

marginfigure: Place a figure in the margin.

Acknowledgments

To Robert, for the bagels and explaining CMYK and color spaces.

References

- [1] Rafal Ablamowicz and Bertfried Fauser. 2007. *CLIFFORD: a Maple 11 Package for Clifford Algebra Computations, version 11*. Retrieved February 28, 2008 from <http://math.tntech.edu/rafal/cliff11/index.html>
- [2] Patricia S. Abrial and Robert Plant. 2007. The patent holder’s dilemma: Buy, sell, or troll? *Commun. ACM* 50, 1 (Jan. 2007), 36–44. doi:10.1145/1188913.1188915
- [3] Sten Andler. 1979. Predicate Path expressions. In *Proceedings of the 6th. ACM SIGACT-SIGPLAN symposium on Principles of Programming Languages (POPL ’79)*. ACM Press, New York, NY, 226–236. doi:10.1145/567752.567774
- [4] David A. Anisi. 2003. *Optimal Motion Control of a Ground Vehicle*. Master’s thesis. Royal Institute of Technology (KTH), Stockholm, Sweden.

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- [5] Sam Anzaroot and Andrew McCallum. 2013. *UMass Citation Field Extraction Dataset*. Retrieved May 27, 2019 from <http://www.iesl.cs.umass.edu/data/data-umasscitationfield>
- [6] Sam Anzaroot, Alexandre Passos, David Belanger, and Andrew McCallum. 2014. *Learning Soft Linear Constraints with Application to Citation Field Extraction*. arXiv:1403.1349 doi:10.48550/arXiv.1403.1349
- [7] R. Baggett, M. Simecek, C. Chambellan, K. Tsui, and M. Fraune. 2025. Fluidity in the Phased Framework of Technology Acceptance: Case Study to Gain a Holistic Understanding of (Older Adult) Participant Advancement Through Acceptance Phases with Mobile Telepresence Robots. *Robotics Aut. Systems*. Manuscript submitted for review.
- [8] David Bau, Jeff Gray, Caitlin Kelleher, Josh Sheldon, and Franklyn Turbak. 2017. Learnable Programming: Blocks and Beyond. *Commun. ACM* 60, 6 (2017). doi:10.1145/3015455
- [9] Alexander Bock and Ulrich Frank. 2021. Low-Code Platform. *Business and Information Systems Engineering* 63 (2021). doi:10.1007/s12599-021-00726-8
- [10] Alexander C. Bock and Ulrich Frank. 2021. In Search of the Essence of Low-Code: An Exploratory Study of Seven Development Platforms. In *2021 ACM/IEEE International Conference on Model Driven Engineering Languages and Systems Companion (MODELS-C)*. 57–66. doi:10.1109/MODELS-C53483.2021.00016
- [11] Lutz Bornmann, K. Brad Wray, and Robin Haunschild. 2019. *Citation concept analysis (CCA)—A new form of citation analysis revealing the usefulness of concepts for other researchers illustrated by two exemplary case studies including classic books by Thomas S. Kuhn and Karl R. Popper*. arXiv:1905.12410 [cs.DL]
- [12] Kenneth L. Clarkson. 1985. *Algorithms for Closest-Point Problems (Computational Geometry)*. Ph.D. Dissertation. Stanford University, Palo Alto, CA. UMI Order Number: AAT 8506171.
- [13] Jacques Cohen (Ed.). 1996. Special issue: Digital Libraries. *Commun. ACM* 39, 11 (Nov. 1996).
- [14] Sarah Cohen, Werner Nutt, and Yehoshua Sagie. 2007. Deciding equivalences among conjunctive aggregate queries. *J. ACM* 54, 2, Article 5 (April 2007), 50 pages. doi:10.1145/1219092.1219093
- [15] Christian Gustavo Cossio-Mercado and Gonzalo Pablo Fernández. 2025. Challenges in the development of a block-based programming environment for Arduino. In *50a Conferencia Latinoamericana de Informática (CLEI)*. <https://www.researchgate.net/publication/396119595>
- [16] Bruce P. Douglass, David Harel, and Mark B. Trakhtenbrot. 1998. Statecharts in use: structured analysis and object-orientation. In *Lectures on Embedded Systems*, Grzegorz Rozenberg and Frits W. Vaandrager (Eds.). Lecture Notes in Computer Science, Vol. 1494. Springer-Verlag, London, 368–394. doi:10.1007/3-540-65193-4_29
- [17] Ian Editor (Ed.). 2007. *The title of book one* (1st. ed.). The name of the series one, Vol. 9. University of Chicago Press, Chicago, Chapter The title of the chapter, 127–238. doi:10.1007/3-540-09237-4
- [18] Ian Editor (Ed.). 2008. *The title of book two* (2nd. ed.). University of Chicago Press, Chicago, Chapter 100, 25–137. doi:10.1007/3-540-09237-4
- [19] Matthew Van Gundy, Davide Balzarotti, and Giovanni Vigna. 2007. Catch me, if you can: Evading network signatures with web-based polymorphic worms. In *Proceedings of the first USENIX workshop on Offensive Technologies (WOOT '07)*. USENIX Association, Berkley, CA, Article 7, 9 pages.
- [20] Torben Hagerup, Kurt Mehlhorn, and J. Ian Munro. 1993. Maintaining Discrete Probability Distributions Optimally. In *Proceedings of the 20th International Colloquium on Automata, Languages and Programming (Lecture Notes in Computer Science, Vol. 700)*. Springer-Verlag, Berlin, 253–264.
- [21] David Harel. 1978. *LOGICS of Programs: AXIOMATICS and DESCRIPTIVE POWER*. MIT Research Lab Technical Report TR-200. Massachusetts Institute of Technology, Cambridge, MA.
- [22] David Harel. 1979. *First-Order Dynamic Logic*. Lecture Notes in Computer Science, Vol. 68. Springer-Verlag, New York, NY. doi:10.1007/3-540-09237-4
- [23] Lars Hörmander. 1985. *The analysis of linear partial differential operators. III*. Grundlehren der Mathematischen Wissenschaften [Fundamental Principles of Mathematical Sciences], Vol. 275. Springer-Verlag, Berlin, Germany. viii+525 pages. Pseudodifferential operators.
- [24] Lars Hörmander. 1985. *The analysis of linear partial differential operators. IV*. Grundlehren der Mathematischen Wissenschaften [Fundamental Principles of Mathematical Sciences], Vol. 275. Springer-Verlag, Berlin, Germany. vii+352 pages. Fourier integral operators.
- [25] Ilirian Ibrahim and Dimitris Moudilos. 2022. Towards model reuse in low-code development platforms based on knowledge graphs. In *Proceedings of the 25th International Conference on Model Driven Engineering Languages and Systems: Companion Proceedings (Montreal, Quebec, Canada) (MODELS '22)*. Association for Computing Machinery, New York, NY, USA, 826–836. doi:10.1145/3550356.3561570
- [26] IEEE 2004. IEEE TCSC Executive Committee. In *Proceedings of the IEEE International Conference on Web Services (ICWS '04)*. IEEE Computer Society, Washington, DC, USA, 21–22. doi:10.1109/ICWS.2004.64
- [27] Markus Kirschmer and John Voight. 2010. Algorithmic Enumeration of Ideal Classes for Quaternion Orders. *SIAM J. Comput.* 39, 5 (Jan. 2010), 1714–1747. doi:10.1137/080734467
- [28] Donald E. Knuth. 1997. *The Art of Computer Programming, Vol. 1: Fundamental Algorithms (3rd. ed.)*. Addison Wesley Longman Publishing Co., Inc., Boston.
- [29] Rainer Koschke. 2006. Survey of Research on Software Clones. *Dagstuhl Seminar Proceedings* 06301 (2006). <http://drops.dagstuhl.de/opus/volltexte/2007/962>
- [30] David Kosiur. 2001. *Understanding Policy-Based Networking* (2nd. ed.). Wiley, New York, NY.
- [31] Leslie Lamport. 1986. *BT_X: A Document Preparation System*. Addison-Wesley, Reading, MA.
- [32] Newton Lee. 2005. Interview with Bill Kinder: January 13, 2005. Video. *Comput. Entertain.* 3, 1, Article 4 (Jan.-March 2005). doi:10.1145/1057270.1057278

- [33] Yuhan Lin and David Weintrop. 2021. The Landscape of Block-Based Programming: Characteristics of Block-Based Environments and How They Support the Transition to Text-Based Programming. *Journal of Computer Languages* 67 (2021), 101075. doi:10.1016/j.col.2021.101075
- [34] Hugo Lourenço, Carla Ferreira, and João Costa Seco. 2021. OSTRICH - A Type-Safe Template Language for Low-Code Development. In *2021 ACM/IEEE 24th International Conference on Model Driven Engineering Languages and Systems (MODELS)*. 216–226. doi:10.1109/MODELS50736.2021.00030
- [35] Christoph Mayr-Dorn, Mario Winterer, Christian Salomon, Doris Hohensinger, and Rudolf Ramler. 2021. Considerations for using Block-Based Languages for Industrial Robot Programming – a Case Study. In *Proceedings of the Conference on Industrial Robot Programming*. Johannes Kepler University, Linz, Austria. Supported by the Austrian Ministry for Transport, Innovation and Technology, the Federal Ministry for Digital and Economic Affairs, and the Province of Upper Austria in the frame of the COMET center SCCH..
- [36] Dave Novak. 2003. Solder man. Video. In *ACM SIGGRAPH 2003 Video Review on Animation theater Program: Part I - Vol. 145 (July 27–27, 2003)*. ACM Press, New York, NY, 4. doi:10.945/woot07-S422 <http://video.google.com/videoplay?docid=6528042696351994555>
- [37] Barack Obama. 2008. A more perfect union. Video. Retrieved March 21, 2008 from <http://video.google.com/videoplay?docid=6528042696351994555>
- [38] Poker-Edge.Com. 2006. Stats and Analysis. Retrieved June 7, 2006 from <http://www.poker-edge.com/stats.php>
- [39] R Core Team. 2019. *R: A Language and Environment for Statistical Computing*. R Foundation for Statistical Computing, Vienna, Austria. <https://www.R-project.org/>
- [40] Brian J. Reiser. 2014. Designing coherent storylines aligned with NGSS for the K-12 classroom. Presentation at National Science Education Leadership Association Meeting, Boston, MA, USA. <https://www.academia.edu/6884962/>
- [41] Mitchel Resnick, Andrés Monroy-Hernández, Natalie Rusk, Evelyn Eastmond, Karen Brennan, Amon Millner, Eric Rosenbaum, Jay Silver, Brian Silverman, and Yasmin Kafai. 2009. Scratch: Programming for All. *Commun. ACM* 52 (11 2009), 60–67. doi:10.1145/1592761.1592779
- [42] Nico Ritschel, Reid Holmes, Felipe Fronchetti, Ronald Garcia, and David C. Shepherd. 2025. Block-based or graph-based? Why not both? Designing a hybrid programming environment for end-users. *Interacting with Computers* 2025 (2025). doi:10.1093/iwc/iwaf028
- [43] Bernard Rous. 2008. The Enabling of Digital Libraries. *Digital Libraries* 12, 3, Article 5 (July 2008). To appear.
- [44] Mehdi Saeedi, Morteza Saheb Zamani, and Mehdi Sedighi. 2010. A library-based synthesis methodology for reversible logic. *Microelectron. J.* 41, 4 (April 2010), 185–194.
- [45] Mehdi Saeedi, Morteza Saheb Zamani, Mehdi Sedighi, and Zahra Sasanian. 2010. Synthesis of Reversible Circuit Using Cycle-Based Approach. *J. Emerg. Technol. Comput. Syst.* 6, 4 (Dec. 2010), 12 pages.
- [46] Joseph Scientist. 2009. The fountain of youth. Patent No. 12345, Filed July 1st., 2008, Issued Aug. 9th., 2009.
- [47] Stan W. Smith. 2010. An experiment in bibliographic mark-up: Parsing metadata for XML export. In *Proceedings of the 3rd. annual workshop on Librarians and Computers (LAC '10, Vol. 3)*, Reginald N. Smythe and Alexander Noble (Eds.). Paparazzi Press, Milan Italy, 422–431.
- [48] Asad Z. Specter. 1990. Achieving application requirements. In *Distributed Systems* (2nd. ed.), Sape Mullender (Ed.). ACM Press, New York, NY, 19–33. doi:10.1145/90417.90738
- [49] Harry Thornburg. 2001. *Introduction to Bayesian Statistics*. Retrieved March 2, 2005 from <http://ccrma.stanford.edu/~jos/bayes/bayes.html>, archived at [<https://web.archive.org/web/20240505055615/https://ccrma.stanford.edu/~jos/bayes/bayes.html>]
- [50] TUG. 2017. *Institutional members of the T_EX Users Group*. Retrieved May 27, 2017 from <http://www.tug.org/instmem.html>
- [51] Boris Veytsman. 2017. *acmart—Class for typesetting publications of ACM*. Retrieved May 27, 2017 from <http://www.ctan.org/pkg/acmart>
- [52] Morteza Zakeri-Nasrabadi, Saeed Parsa, Mohammad Ramezani, Chanchal Roy, and Masoud Ekhtiarzadeh. 2023. A Systematic Literature Review on Source Code Similarity Measurement and Clone Detection: Techniques, Applications, and Challenges. *Journal of Systems and Software* 200 (2023), 111582. doi:10.1016/j.jss.2023.111582

A Research Methods

A.1 Part One

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A.2 Part Two

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B Online Resources

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