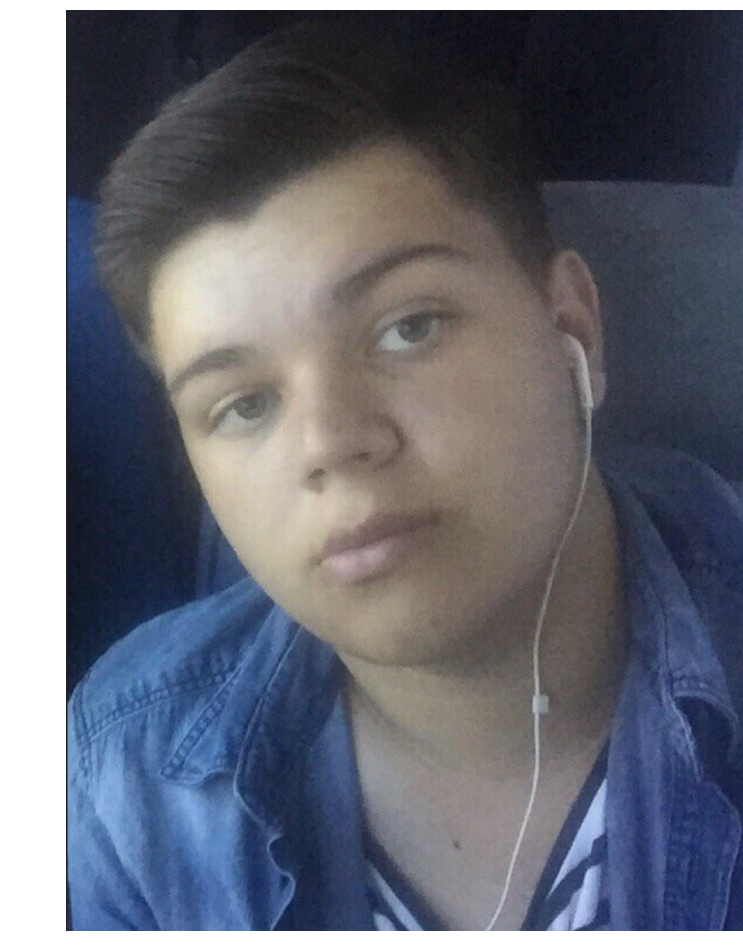


#64



Designing a neural network cascade for object detection in drawing and graphical documentation processing. *Vitko K. Kashirskoye sh., 31, Moscow, 115409 vitko.1998@mail.ru, Tikhomirova A.*



First Author



Second Author



SUMMARY

- Introduction
- Analysis of Preprocessing Methods of Drawing and Graphic Documentation
- Designing an Assembly of Preprocessing Methods and Models for Object
- Detection and Textual Information Recognition
- Conclusion

APPROACH

Development of methods for analyzing drawing and graphic documentation

RESULTS

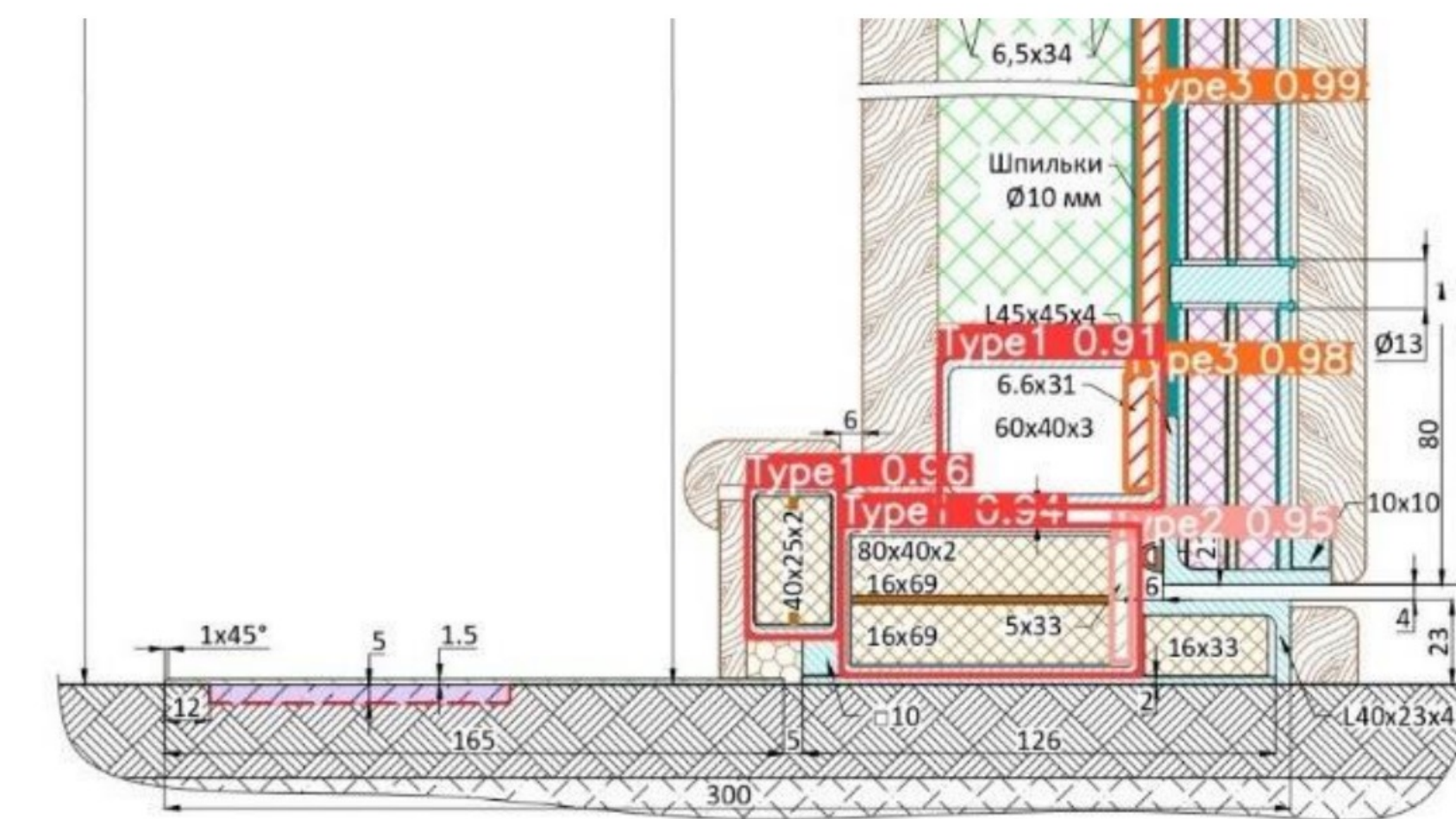
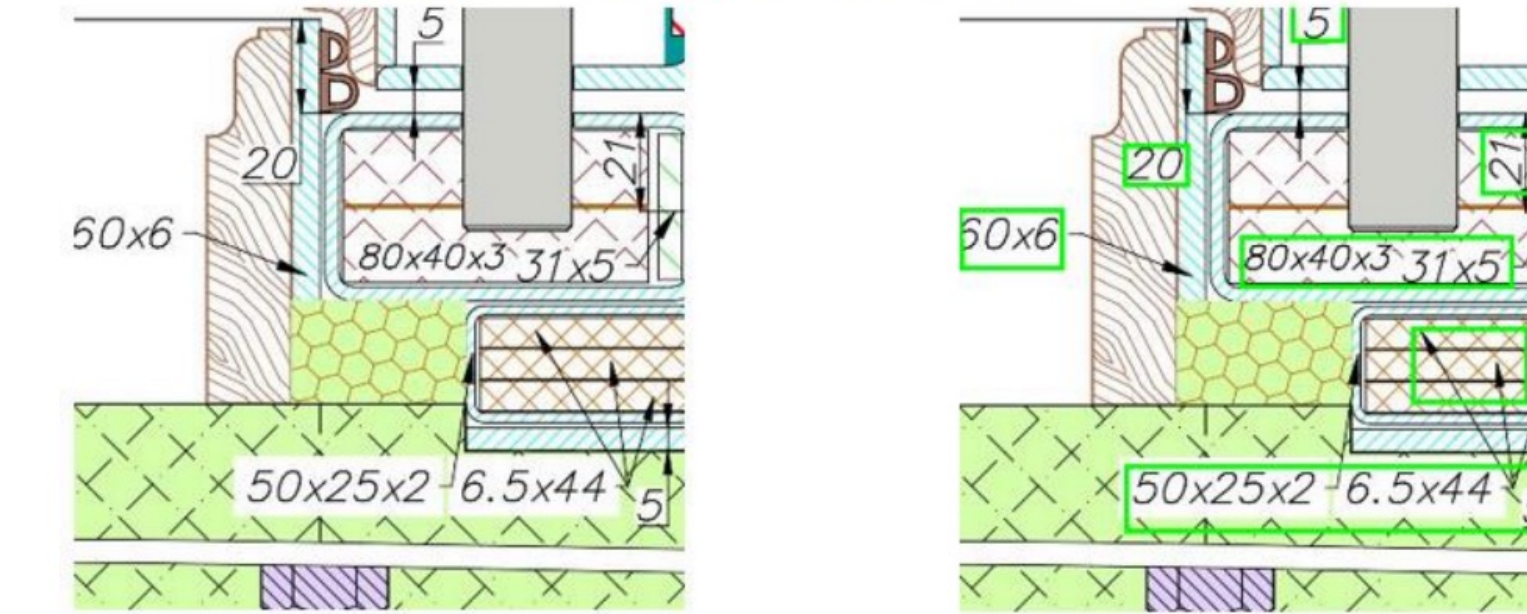


Fig. 3. An example of drawing object detection



50x6 → { '60x6': (0, 107),
 '20': (102, 64),
 '50x25x2 6.5x44 15': (104, 212),
 '80x40x3 31x5': (163, 145),
 '5': (184, 0),
 '*': [(205, 174), (319, 0)],
 '21': (291, 62). }

DISCUSSION

	True for text	False for text	True for object	False for object
Reject	793	22	439	42
Not reject	31	-	9	-

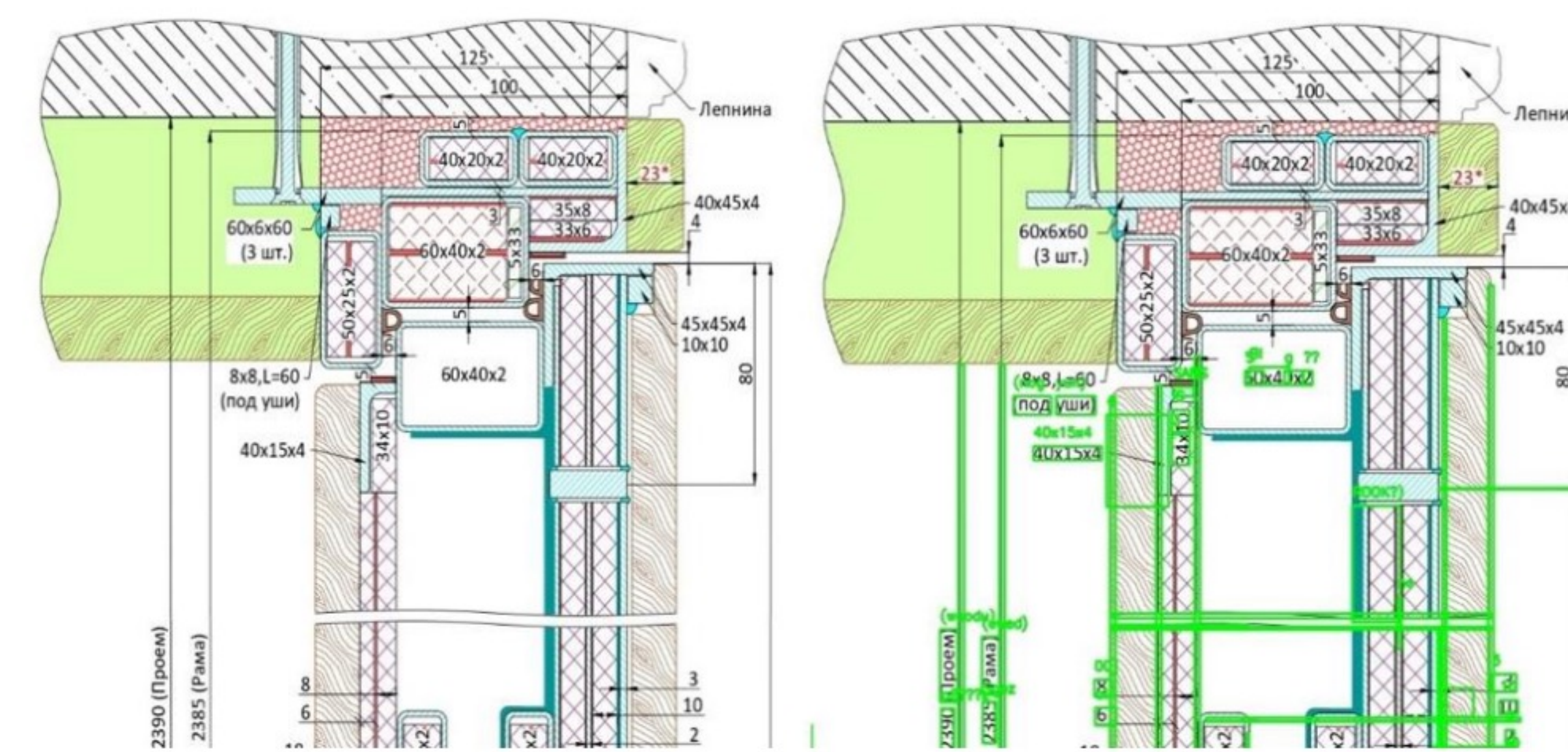
INTRODUCTION

Making customized products carries great risks and costs for the manufacturer, including keeping stock records – how many materials and resources are currently in stock and how much will be spent on each specific order.

This is mostly handled by a person in Excel, and automation of this process is not possible due to the large differences in the business processes in each production facility.

However, with a detailed analysis, it is possible to create a mechanism that automates the cost accounting process. For this purpose, it is possible and, in most cases, necessary to use various practices of machine learning methods.

ANALYSIS



METHODS

Assembly of Preprocessing Methods and Models for Object Detection and Textual Information Recognition

CONCLUSIONS

For automation of the routine calculation and material accounting process for customized products, a cascade was implemented, which included a set of preprocessing methods and two neural networks. The first one solves the problem of object detection, and the second one – the recognition of textual information. All three approaches described above were implemented.